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COMMISSION

RENEWABLE ENERGY PROGRAM

2008 ANNUAL REPORT TO THE LEGISLATURE

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Arnold Schwarzenegger, *Governor*

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Abstract

The *2008 Annual Report to the Legislature* (*2008 Annual Report*) and *Appendix* respond to a legislative directive to report annually on the results of the Renewable Energy Program's activities and status of funding. The comprehensive *2008 Annual Report* covers the period of July 1, 2007 through June 30, 2008, and includes information on the following fiscal and functional aspects of the Renewable Energy Program: allocation of Renewable Resource Trust Fund dollars, information on cash flow, program activities and results, and projects and funding awards. The *Appendix* contains detailed project descriptions, statistics, and financial data.

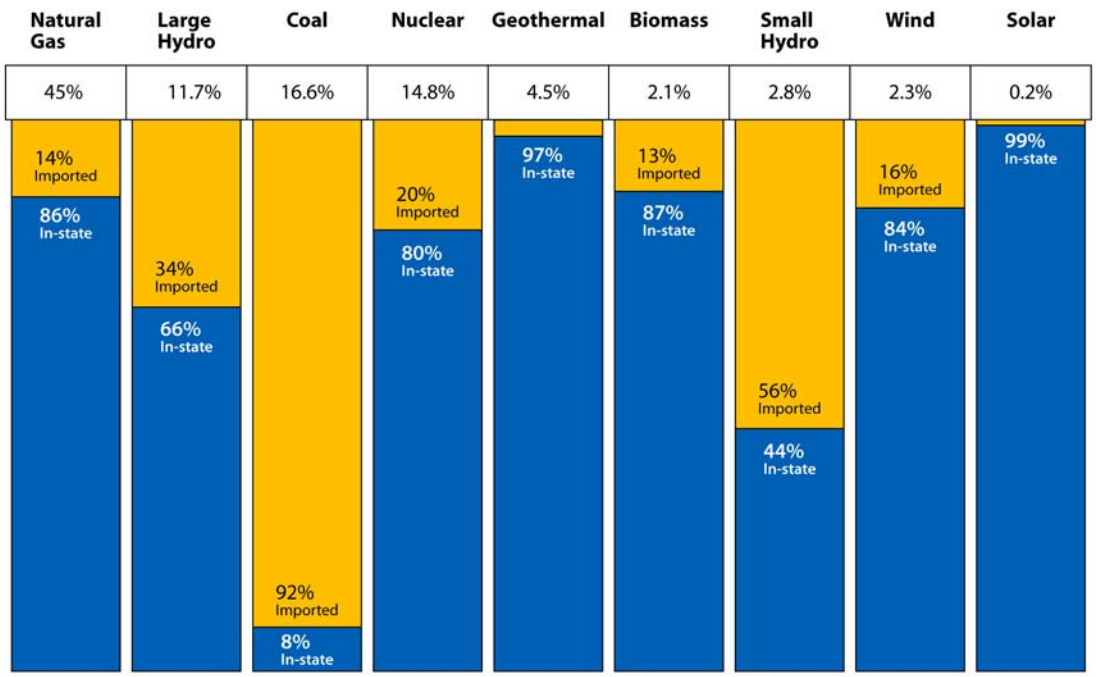
Keywords: Renewable Energy Program, Renewable Resource Trust Fund, Renewables Portfolio Standard, supplemental energy payments, market price referent, Western Renewable Energy Generation Information System, New Renewable Facilities Program, New Renewable Resources Account, Existing Renewable Facilities Program, Emerging Renewables Program, California Solar Initiative, New Solar Homes Partnership, Senate Bill 1, Consumer Education Program, Customer Credit Program, renewable energy, solar thermal, photovoltaic, biomass, fuel cell, geothermal, wind, distributed generation

EXECUTIVE SUMMARY

Introduction

Over the last three decades, California has built one of the largest and most diverse renewable generation portfolios in the world. Currently, almost 12 percent of the state's electricity is from renewable energy sources such as solar, wind, geothermal, and biomass (Figure ES-1).

Figure ES-1: California's Electricity Mix - 2007



Source: California Energy Commission, *Gross System Power Report 2007*

Since 1998, the California Energy Commission's Renewable Energy Program has supported policies and programs that provide Californians with cleaner sources of energy for their homes, businesses, and schools. Designed to boost sagging renewable energy generation as the state's electricity services industry was being restructured, the Renewable Energy Program has provided various rebates and renewable electricity production incentives for new and existing renewable facilities and installing emerging technologies. The 2001 electricity crisis increased California's consumers' interest for alternative measures to reduce their rising utility rates.

On the heels of the electricity crisis, Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002) introduced a Renewables Portfolio Standard (RPS) with the goal of increasing the portion of electricity derived from renewable resources and sold to retail customers to 20 percent by 2017. That mandate was modified to accelerate the 20 percent goal to 2010 by Senate Bill 1250 (Perata, Chapter 512, Statutes of 2006). In 2006, Governor Arnold Schwarzenegger also called for a 20

percent target within the RPS goals to be met with electricity from biomass and established the Bioenergy Action Plan to develop an integrated and comprehensive state policy on biomass.

Governor Schwarzenegger and the Energy Commission endorsed a further enhanced target of 33 percent from renewable energy by 2020. Responding to the challenge of climate change, the Governor and the State Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), capping California's greenhouse gas emissions at the 1990 level by 2020. California's RPS aggressive renewable energy and energy-efficiency goals are now intertwined with AB 32 to reduce greenhouse gas emissions. Meeting California's energy needs while reducing greenhouse gas emissions with cleaner, renewable resources are the centerpieces of the Renewable Energy Program's efforts. The Program currently provides incentives for solar installations on new energy-efficient homes, offers rebates for distributed wind and fuel cell systems, and secures for California the many benefits of continued operation of existing renewable generation facilities. Since 1998, the Renewable Energy Program has awarded $743.7 million resulting in approximately 5,312 megawatts of renewable electricity capacity funded through four program areas: Emerging Renewable, Existing Renewable Facilities, New Solar Home Partnership and New Renewable Facilities. The Consumer Education Program has paid $10 million from the account towards increasing public awareness of the benefits and options of renewable energy. Additionally, the Customer Credit Program, discontinued in 2004, paid $65 million to renewable providers for electricity delivered to customers.

Renewable Energy Program and the RPS Accomplishments for Fiscal Year 2007-2008

Renewables Portfolio Standard

The Energy Commission and the California Public Utilities Commission jointly implement the state's RPS. The Energy Commission's responsibility was to certify renewable facilities as eligible for the RPS, design and implement an accounting system to track and verify RPS compliance, and distribute supplemental energy payments. In October 2007, Senate Bill 1036 (Perata, Chapter 685, Statutes of 2007) repealed the provisions for awarding supplemental energy payments and required the Energy Commission to return the remaining unencumbered funds to electrical corporations whose ratepayers contributed funds that supported the Renewable Resource Trust Fund, which is the depository for the Renewable Energy Program funds. The transfer occurred in March 2008.

The Energy Commission implements the RPS through guidelines, and during fiscal year 2007-2008, these guidelines were updated to reflect changes resulting from of SB 1036 and AB 809 (Blakeslee, Chapter 684, Statutes of 2007). Program guidelines were also revised to require that all participants in California's RPS must register with and use the Western Renewable Energy Generation Information System (WREGIS) to comply with the RPS. The Energy Commission developed WREGIS to track and verify RPS procurement. WREGIS staff began accepting applications for account holder (private system users) registration and, as of June 30, 2008, 124

account holders were registered with WREGIS, with another 24 pending complete registration; 224 active renewable facilities are registered and an additional 320 renewable facilities are pending approval.

The Energy Commission also adopted the *Renewables Portfolio Standard Procurement Verification Report*. The report verifies RPS procurement for the 2005 calendar year, provides data on the investor-owned utilities' progress toward RPS procurement goals, and assists the California Public Utilities Commission in determining the investor-owned utilities' compliance with the RPS. As of June 30, 2008, 697 facilities were certified or pre-certified as eligible for the RPS, representing 20.17 gigawatts of renewable capacity.

Emerging Renewables Program

Over the last decade the Emerging Renewables Program has provided $402 million in rebates and production incentives to customers who purchase and install renewable energy systems to offset part or all of their electricity needs at their homes or businesses.

On December 31, 2006, the solar portion of the Emerging Renewables Program ended and was replaced on January 1, 2007, with the Energy Commission's New Solar Homes Partnership and the California Public Utilities Commission's California Solar Initiative. Fuel cells and small wind turbines are still eligible for rebates under the Energy Commission's Emerging Renewables Program.

During fiscal year 2007-2008, the Energy Commission paid $28.1 million to 2,195 rebate applicants for completed projects located in investor-owned utility service areas. These completed projects represent 10.6 megawatts of generating capacity from photovoltaic and wind systems. Customers planning to install additional systems held approved rebate reservations totaling 3.9 megawatts of solar and wind capacity, encumbering about $10.6 million.

The New Solar Homes Partnership encourages solar installations combined with energy efficiency measures in the residential new construction market. Between July 1, 2007, and June 30, 2008, the program paid $667,778 for 51 completed systems on new production homes. As of June 30, 2008, 250 New Solar Homes Partnership applications, representing 3,640 residential solar systems, were in various stages of applying to the program.

Existing Renewable Facilities Program

Through the Existing Renewable Facilities Program, the Energy Commission provides production incentives to support existing renewable facilities to remain on-line while they transition to a competitive market. Beginning in 2007, under a revised program structure, existing facilities that apply for funding must include a project-specific target price request and a cents per kilowatt-hour cap on funding for energy produced in a calendar year. For fiscal year 2007-2008, the Energy Commission made payments to existing renewable facilities totaling $18.1 million on 3,319 gigawatt-hours of generation.

Consumer Education Program

Through the Consumer Education Program, the Energy Commission increases public awareness of the benefits and options of renewable energy. As part of its current funding efforts, the Consumer Education Program supports the comprehensive New Solar Homes Partnership public awareness campaign encouraging production home builders to partner with the Energy Commission and offer solar electric high energy efficiency homes as standard features to home buyers. The campaign maximizes partnership efforts to educate and leverage the program's assets between builders, utilities, solar retailers, and the real estate industry.

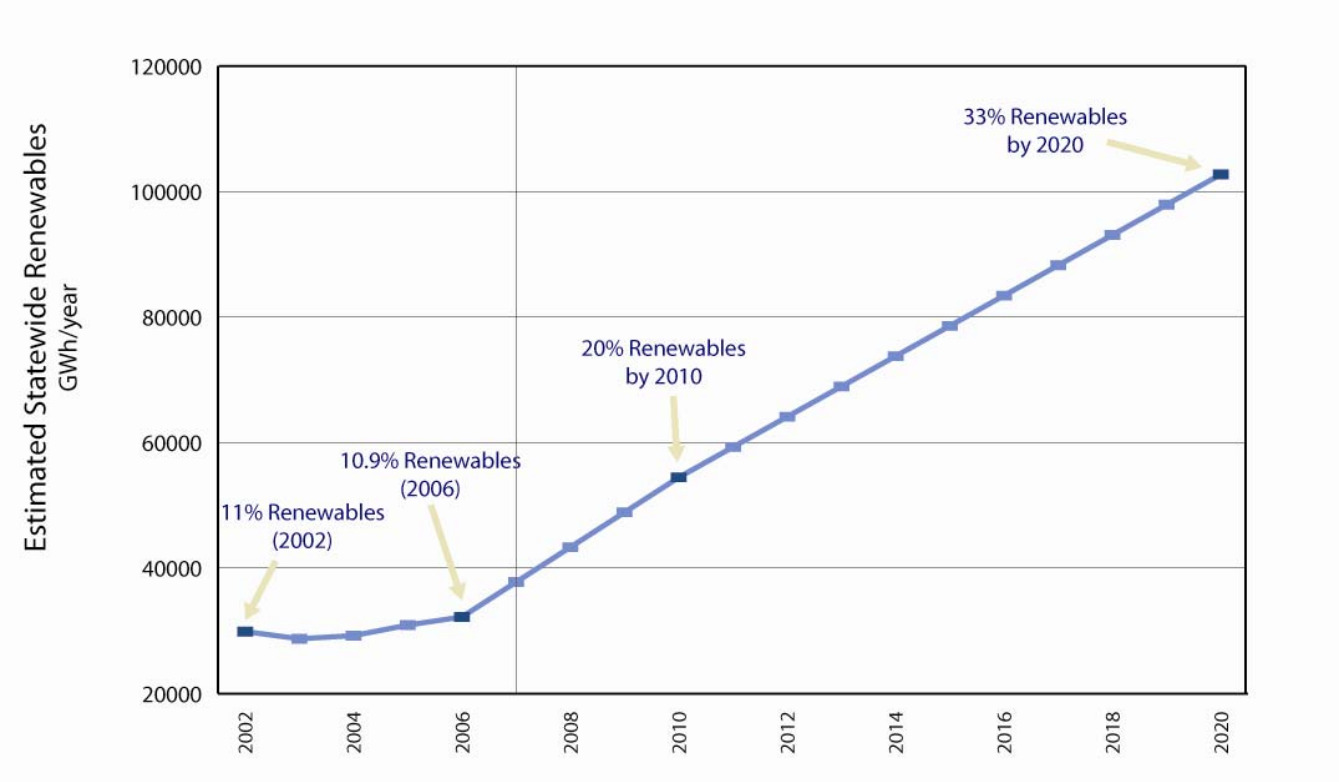
New Renewable Facilities Program

Since 1998, the Energy Commission has supported the development of new in-state renewable electricity generating facilities through the New Renewable Facilities Program. The Program has provided $74 million to 47 projects that have come on-line representing 489 megawatts of new renewable energy capacity added to California's electricity grid. During fiscal year 2007-2008, $4.7 million was disbursed to new facilities for 842 gigawatt-hours of generation.

Achieving Renewables Portfolio Standard 20 Percent by 2010 and a Target of 33 Percent by 2020

California has one of the largest and most diverse renewable generation systems in the world. So far, however, the RPS results are not on track to meet its mandate, due principally to insufficient transmission infrastructure and complex administration. Even with 570 megawatts from new, repowered, and restarted renewable energy facilities added to the system, increased electricity growth has matched these additions, and California remains at almost the same percentage of electricity from renewable energy as when the law was passed. Although they may have signed contracts for the necessary amount by 2010, the investor-owned utilities are not expected to be able to serve 20 percent of their retail load with renewable energy by 2010. A goal of 33 percent by 2020 *is* feasible, but only if the state commits now to significant investments in transmission infrastructure and key programmatic changes (Figure ES-2).

Figure ES-2: Progress Toward California's Renewable Energy Goals



The Renewable Energy Program continues to be instrumental in increasing the amount of renewable resources used to meet California's growing electricity demand. As market conditions changed over the years, the program responded and evolved. Its focus now combines the state's RPS goals, which is the most aggressive renewable energy policy in the nation, with the importance of decreasing greenhouse gas emissions.

The Renewable Energy Program is implementing and supporting California's RPS goals and has made successful investments in these areas:

- The Existing Renewable Facilities Program's production incentives assist RPS-eligible biomass and solar thermal facilities, with costs too high to be competitive, to remain on-line. The program's funding also provides a stimulus to restart existing facilities that have shut down. Preserving existing facilities' on-line status contributes to meeting the state's statutory RPS requirement of 20 percent by 2010 by maintaining existing renewable generation and promoting additional generation.

  Although existing wind facilities are technically eligible for Existing Renewable Facilities Program funding, they currently do not require assistance. Geothermal, small hydro, digester gas, landfill gas, municipal solid waste, and waste tire technologies were supported with program incentives from 1998 through 2001, but have not been eligible for funding since January 2002. Senate Bill 1038 (Sher, Chapter 515, Statutes of 2002) and SB 1250 limited Existing Renewable Facilities Program funding to biomass, solar thermal and wind technologies.

A substantial portion of the RPS procurement by Pacific Gas and Electric (26 percent), Southern California Edison (8 percent) and San Diego Gas & Electric (25 percent) is from electricity produced by existing biomass and/or solar thermal electric facilities that received Existing Renewable Facilities Program funding in 2007. For the investor-owned utilities, the Existing Renewable Facilities Program is essential to the success of the RPS.[1]

- In 2006, based on the Energy Commission's demand forecast for 2010, biomass generators would need to produce nearly 11,000 gigawatt-hours of electricity to meet the Governor's goal of 20 percent of the RPS generation to come from biomass in 2010 and 2020. Existing biomass facilities participating in the Existing Renewable Facilities Program are expected to produce over 3,000 gigawatt-hours of RPS-eligible generation, or about 30 percent of the target.

- Although legislation currently excludes from RPS-eligibility the energy used on site from facilities supported by the Emerging Renewables Program and the New Solar Homes Partnership, these programs have funded more than 123 megawatts of new renewable generating capacity, generating an estimated 161 gigawatt-hours of electricity for consumers and offsetting a corresponding amount of grid-supplied electricity.

  In addition, it is important to recognize the contribution of distributed generation toward greater renewable resource diversity. The ambitious objective of Senate Bill 1 (Murray, Chapter 132, Statutes of 2006) for solar-distributed generation is to achieve 3,000 megawatts of installed solar by the end of 2016.

- Of the 47 New Renewable Resources Account completed projects, 36 projects received certification under the RPS, representing more than 217 megawatts of annual capacity. Many small wind projects were consolidated when certified under the RPS and as a result, these 36 projects constitute 22 RPS-certified generating facilities. Since 1998, these facilities have generated more than 3,600 gigawatt-hours of renewable generation.[2] Since incentive payments from the New Renewable Resources Account extend for a maximum of five years, during the 2007-2008 fiscal year, 11 of the 18 RPS-certified projects continued receiving incentive payments from the Account producing more than 280 gigawatt-hours of RPS-eligible generation.

As one of the world's largest economies and twelfth largest emitter of greenhouse gases, California must be a leader in reducing greenhouse gases and a major participant in slowing global warming. Renewable energy is essential to reducing greenhouse gas emissions and reaching the AB 32 goals.

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[1] PG&E, SCE, and SDG&E annually report their RPS-procurement (due May 1) to the Energy Commission for the previous calendar year according to the requirements in the *Renewables Portfolio Standard Eligibility Guidebook*. Energy Commission staff has not verified the procurement claims listed in the 2007 filings, which are self-reported.

[2] Facilities that participate in the New Renewable Resources Account are only required to submit invoices for generation that is eligible for incentive payments. The generation reported only includes generation eligible for incentive payments.

CHAPTER 1:

INTRODUCTION

The California Energy Commission (Energy Commission) is pleased to submit its *2008 Annual Report to the Legislature (2008 Annual Report)*, covering the Renewable Energy Program over the period of July 1, 2007, through June 30, 2008. Public Resources Code Section 25748(a) requires the Energy Commission to report annually to the Legislature on the Renewable Energy Program, and the report shall include the following:

> (1) A description of the allocation of funds among existing, new, and emerging technologies, the allocation of funds among programs, including consumer-side incentives, and the need for the reallocation of money among those technologies.
>
> (2) The status of account transfers and repayments.
>
> (3) A description of the cumulative commitment of claims by account, the relative demand for funds by account, and a forecast of future awards.
>
> (4) A description of the allocation of funds from interest on the accounts.
>
> (5) An itemized list, including project descriptions, award amounts, and outcomes for projects awarded funding in the prior year.

In addition, the *2008 Annual Report* must include a discussion of the progress being made toward achieving the Renewables Portfolio Standard (RPS) targets identified in Public Resources Code Section 25740 for each element of the Renewable Energy Program. California's RPS requires that 20 percent of retail electricity sales be met with renewable energy by 2010, and Governor Schwarzenegger, the Energy Commission, and the California Public Utilities Commission (CPUC) have endorsed an enhanced goal of 33 percent renewables by 2020 for the state as a whole.

Lastly, the *2008 Annual Report* must identify the types and quantities of biomass fuels used by facilities receiving funds from the Existing Renewable Facilities Program and their impacts on improving air quality.

Following a legislative history of the Renewable Energy Program, this report is divided into eight chapters and an Appendix:

Chapter 1: Allocation of Funds

Chapter 2: Program Activities and Results

Chapter 3: Additional Renewable Energy Program Activities

Chapter 4: Historical Renewable Energy Program Activities

Chapter 5: Reallocation of Funds

Chapter 6: Account Transfers and Repayments

Chapter 7: Interest Expenditures

Chapter 8: Contributions to the Renewable Resources Trust Fund

Appendix: *2008 Annual Report to the Legislature Appendix*

The *2008 Annual Report* discusses the mandated items for fiscal year 2007-2008, with reference to prior and future fiscal years for context and comparison as appropriate.

Legislative History

1998 through 2006

Beginning with the enactment of Assembly Bill 1890 (Brulte, Chapter 854, Statutes of 1996) and continuing through legislation passed in 2006, the state has authorized ratepayer funding and established programs to dramatically increase the proportion of renewable energy and energy efficiency serving California utility customers. AB 1890 authorized the collection of funds from utility ratepayers through a nonbypassable system benefit charge to support existing, new, and emerging renewable resources, among other public goods.

Senate Bill 90 (Sher, Chapter 905, Statutes of 1997) authorized the Energy Commission to establish the Renewable Energy Program to distribute funds collected under AB 1890 and provide incentives for the deployment of renewable energy generation facilities. The Energy Commission, working with the CPUC and other state agencies, achieved initial success with those programs as the state sought to meet new electricity demand with environmentally benign resources. In light of the unwieldy wholesale electricity prices California faced in 2000 and 2001, and other problems in the market, California's efforts to restructure the market shifted direction, which spawned the creation of the RPS.

Assembly Bill 995 (Wright, Chapter 1051, Statutes of 2000), and Senate Bill 1194 (Sher, Chapter 1050, Statutes of 2000) responded to the state's energy crisis by creating the Reliable Electric Service Investments Act, which extended the system benefit charge funding for energy efficiency, renewable energy, and research and development through 2011. Under this legislation, the Energy Commission retained the administration of renewable energy funding and was charged with preparing a five-year investment plan for the Renewable Energy Program for the period January 1, 2002, to January 1, 2007.[3]

Many of the recommendations put forward in the 2001 investment plan were codified by Senate Bill 1038 (Sher, Chapter 515, Statutes of 2002). A companion measure, Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002), created the state's RPS to help diversify the state's electricity system and reduce its growing dependence on natural gas by increasing the

[3] California Energy Commission, June 2001, *Investing in Renewable Electricity Generation in California*, P500-00-022, www.energy.ca.gov/reports/2001-06-21_500-00-022.PDF.

percentage of renewables in the state's electricity mix to 20 percent by 2017. That legislation set specific requirements for the utilities, the CPUC, and the Energy Commission to ensure that the state meets the targets of the RPS.

Additional legislation enacted during the years 2003-2005 refined aspects of the Renewable Energy Program, and, consequently, the Energy Commission adopted changes to the program's various guidelines to reflect the following legislation:

- Senate Bill 704 (Florez, Chapter 480, Statutes of 2003) required the Energy Commission to allocate $6 million from the Renewable Resource Trust Fund (RRTF) for incentives to electricity-generating facilities that increased their utilization of qualified agricultural biomass for the 2003-2004 fiscal year.
- Senate Bill 183 (Sher, Chapter 666, Statutes of 2003) amended and recast the provisions of Public Utilities Code Sections 383.5 and 445 governing the Renewable Energy Program into Public Resources Code Sections 25740 through 25751.
- Senate Bill 67 (Bowen, Chapter 731, Statutes of 2003) modified the eligibility requirements for renewable generators located out of state.
- Senate Bill 168 (Bowen, Chapter 733, Statutes of 2003) made technical amendments to Public Utilities Code Sections 383.5 and 445, which were chaptered out because SB 183 recast those provisions into the Public Resources Code.
- Assembly Bill 135 (Reyes, Chapter 867, Statutes of 2004) authorized the Energy Commission to immediately use up to $60 million of the funds in the RRTF to support the Emerging Renewables Program element of the Renewable Energy Program. These funds may be expended only until December 31, 2008, and are subject to the repayment requirements of Public Resources Code Section 25751(f).
- Assembly Bill 200 (Leslie, Chapter 50, Statutes of 2005) modified the eligibility requirements for renewable generators located out of state serving the load of utilities such as Sierra Pacific Power Company and PacifiCorp that have a limited number of customers in California.

California's environmental and energy policy defined 2006 as a watershed year with the legislative passage of Senate Bill 1 (Murray, Chapter 132, Statutes of 2006); Senate Bill 107 (Simitian, Chapter 464, Statutes of 2006); Senate Bill 1250 (Perata, Chapter 512, Statutes of 2006); the California Global Warming Solutions Act of 2006 (Assembly Bill 32, Núñez, Chapter 488, Statutes of 2006), Assembly Bill 2189 (Blakeslee, Chapter 747, Statutes of 2006), and Assembly Bill 1969 (Yee, Chapter 731, Statutes of 2006). These statutes affected implementation of the Energy Commission's Renewable Energy Program.

- SB 1 established in statute the California Solar Initiative (CSI), the largest solar installation incentive program of its kind in the country. With a goal of 3,000 megawatts (MW) of new, solar-produced electricity by the end of 2016, the program aims to move the state toward a cleaner energy future and help lower the cost of solar systems for consumers.

- SB 107 accelerated California's RPS target by requiring retail sellers of electricity to increase renewable energy purchases by at least 1 percent per year with a target of 20 percent renewables by 2010. It also added new components to the RPS program, including bringing publicly owned electric utilities (POUs) more fully into the RPS by requiring them to report to the Energy Commission their specific goals and progress toward the goals. Without tracking this additional data, it would not be possible to assess overall state progress toward the RPS goals.
- SB 1250 with SB 107 authorized the Energy Commission's ongoing use of public goods charge funds collected from January 1, 2007, through January 1, 2012, for the continued operation of the Renewable Energy Program.
- AB 2189 modified RPS eligibility requirements for small hydroelectric generation facilities regarding efficiency improvements that result in increased capacity.
- AB 1969 added Section 399.20 to the Public Utilities Code to encourage energy production from renewable resources at public water and wastewater facilities. In July 2007 CPUC Decision 07-07-027 implemented AB 1969 and adopted tariffs and standard contracts for water and wastewater customers and similar tariffs for other customers up to 1.5 MW in size for a cumulative statewide total of 250 MW. The Energy Commission incorporated these changes in its RPS guidelines to expand RPS eligibility to these facilities.

Also passed in 2006, AB 32 set a goal of reducing greenhouse gas emissions to 1990 levels by 2020. The codification of AB 32 represented a tremendous step forward as California took its place as an international leader in efforts to prevent catastrophic climate change induced by greenhouse gas emissions. Electricity generation from fossil fuel power plants and emissions from the transportation sector are the two largest contributors to the state's greenhouse gas emissions.

2007 through June 30, 2008

Senate Bill 1036 (Perata, Chapter 685, Statutes of 2007), effective January 1, 2008, recast California's RPS program and made several significant changes to the Renewable Energy Program. Among other directives, the legislation abolished the Energy Commission's authority to award supplemental energy payments (SEPs) meant to cover the above-market costs of procuring renewable energy for the RPS and eliminated the New Renewable Resources Account of the RRTF effective July 1, 2008. Subsequent chapters provide further details of this legislation.

In addition, Assembly Bill 809 (Blakeslee, Chapter 684, Statutes of 2007) expanded the RPS eligibility of hydroelectric facilities by allowing the incremental generation associated with new efficiency improvements to large hydroelectric facilities to qualify for the RPS.

Renewable Energy Program Elements

Since its inception in 1998, the Renewable Energy Program has evolved pursuant to enacted legislation and its structure has consisted of the following present and past elements:

- The Emerging Renewables Program provides rebates and production incentives to end-use consumers who purchase and install eligible renewable energy systems for on-site generation. Through 2006, eligible technologies were solar photovoltaic, small wind, fuel cells using renewable fuels, and solar thermal electric. Effective in 2007, only small wind systems (rated output of 50 kilowatts [kW] or less) and fuel cells (using a renewable fuel) are eligible. The Energy Commission's New Solar Homes Partnership (NSHP) and the CPUC's CSI have replaced the solar component of the Emerging Renewables Program. The NSHP provides financial incentives and other support to home builders, encouraging the construction of new, energy-efficient solar homes.
- The Existing Renewable Facilities Program offers production incentives to existing solid-fuel biomass, solar thermal, and wind facilities. Incentive payments are tied to market prices, with no payments made if the market price is above a predetermined target price. Beginning in 2007, under a revised program structure, existing facilities must apply for funding. Applications must include a project-specific target price request and a cents-per-kilowatt-hour (cents/kWh) cap on funding for energy produced in a calendar year.
- The Consumer Education Program funds grants and contracts to increase public awareness of renewable energy and its benefits and helps develop a consumer market for renewable energy and small-scale emerging renewable energy technologies.
- The New Renewable Facilities Program fostered the development of new in-state renewable electricity generation facilities by providing financial support. The program consisted of two parts. Under the first, production incentives awarded through competitive auctions provided support to prospective new renewable electricity generation projects. Once they came on-line, eligible projects received payments for their first five years of generation. Second, under the RPS, the New Renewable Facilities Program was to provide SEPs for up to 10 years to eligible projects for the above-market costs of meeting RPS requirements. In October 2007, however, the enactment of SB 1036 removed the Energy Commission's authority to award SEPs and abolished the New Renewable Resources Account as of July 1, 2008.
- The Customer Credit Program provided incentives to consumers who purchased renewable energy in the direct access market. This program allowed renewable energy providers to offer electricity products to their customers at prices competitive with conventional electricity products. The program was discontinued after payments made in December 2004 concluded Customer Credit Program activities.

The next chapter discusses RRTF funding and expenditures for each of the Renewable Energy Program elements.

CHAPTER 2:
Allocation of Funds

Since 1998, Renewable Energy Program funding allocations have responded to market changes while supporting the state's promotion of renewable resource diversity and clean energy goals. Over the years, the program's funding has undergone relatively minor fluctuations. However, in fiscal year 2007-2008, the enactment of SB 1036 significantly affected funding by implementing the following:

- Eliminated the Energy Commission's authority to award supplemental energy payments, effective January 1, 2008, and transferred administrative responsibility for approving above-market costs for investor-owned utility (IOU) contracts to the CPUC. SEPs were intended to cover the above-market costs of renewable energy procured to meet the RPS.
- Required the Energy Commission to terminate all pending awards made to projects under the New Renewable Resources Account of the RRTF before January 1, 2002, unless the projects were on-line and operational by January 1, 2007.
- Required the Energy Commission, by March 1, 2008, to transfer the New Renewable Resources Account's remaining unencumbered funds back to electrical corporations whose ratepayers contributed funds to support the RRTF. These electrical corporations include Pacific Gas and Electric (PG&E), San Diego Gas & Electric (SDG&E), Southern California Edison (SCE), and Bear Valley Electric Service (a division of Golden State Water Company).
- Abolished the Renewable Energy Program's New Renewable Resources Account effective July 1, 2008.
- Reduced the amount of collections for the Renewable Energy Program from approximately $150 million annually to about $72 million annually for 2008-2011.
- Reallocated 2008-2011 funding among the Existing Renewable Facilities Program (20 percent), Emerging Renewables Program (79 percent), and Consumer Education Program (1 percent).

Table 1 compares the Renewable Energy Program's original funding allocations under SB 90 (1998-2001) with SB 1038 (2002-2006) and the subsequent reallocation of SB 1038 Customer Credit Program funds upon discontinuation of that program consistent with the Energy Commission's *Customer Credit Report* [4] recommendations.

[4] California Energy Commission, April 2003, *Customer Credit Renewable Resources Account: Report to the Governor and the Legislature*, 500-03-008F, www.energy.ca.gov/reports/2003-04-22_500-03-008F.PDF.

Table 1: Renewable Energy Program Funding Allocations 1998 through 2006

Program	SB 90 1998-2001		SB 1038 2002-2006[5]		SB 1038 2002-2006 (Reallocation of Customer Credit)[6]	
	Percent of Total	$Million	Percent of Total	$Million	Percent of Total	$Million
New Renewable Facilities	30	162.0	51.5	347.625	51.5	347.625[6]
Emerging Renewables	10	54.0	17.5	118.125	26.5	178.875
Existing Renewables	45	243.0	20	135.000	20	135.000
Consumer Education	1	5.4	1	6.750	2	13.500
Customer Credit	14	75.6	10	67.500	0	0.000
TOTAL	100	540.0	100	675.000	100	675.000

Source: SB 90 (Sher, Chapter 905, Statutes of 1997) and SB 1038 (Sher, Chapter 515, Statutes of 2002).

Subsequent funding allocations for 2007-2011, legislated by SB 107 and SB 1250, were affected by the requirements of SB 1036, effective January 1, 2008. With the elimination of the New Renewable Resources Account, SB 1036 essentially reduced RRTF revenues by 51.5 percent and established new funding allocations for the remaining programs: the Existing Renewable Facilities Program (20 percent), Emerging Renewables Program (79 percent), and Consumer Education Program (1 percent). Table 2 summarizes 2007 through 2011 funding.

Table 2: Renewable Energy Program Funding Allocations 2007 through 2011

Program	SB 107 & SB 1250 2007[6,7]		SB 1036 2008-2011[6]	
	Percent of Total	$Million	Percent of Total	$Million
New Renewable Facilities	51.5	75.110[5]	0	0
Emerging Renewables	37.5	54.691	79	227.52
Existing Renewables	10	14.584	20	57.60
Consumer Education	1	1.459	1	2.88
TOTAL	100	145.844	100	288.00

Source: SB 107 (Simitian, Chapter 464, Statutes of 2006); SB 1250 (Perata, Chapter 512, Statutes of 2006), and SB 1036 (Perata, Chapter 685, Statutes of 2007).

[5] The total amount collected each year is adjusted annually at a rate equal to the lesser of the annual growth in electric commodity sales or inflation, as defined by the gross domestic product deflator.
[6] Under SB 1036, these are unencumbered funds transferred back to the electrical corporations whose ratepayers contributed funds to support the RRTF less the remaining General Fund Loan of $18,200,000. The total amount of New Renewable Resources Account funds available for transfer to the utilities did not include $18,200,000 that is still owed to the RRTF from the General Fund as a result of monies borrowed under the Budget Act of 2002 (Statutes of 2002, Chapter 379).
[7] Actual funds deposited into the RRTF from January 1, 2007 through December 31, 2007.

The Renewable Energy Program retains the authority to reallocate funds among its programs, as detailed in Chapter 5 of this report.

Renewable Energy Program Disbursements

Since 1998, each of the Renewable Energy Program's elements has supported a targeted component of the renewable energy industry while fostering the industry's eventual self-sufficiency. Fund disbursements have paid for incentives for new and existing utility-scale renewable energy generating facilities; consumer rebates for on-site renewable energy systems; credits for choosing renewable energy; and customer information on the purchase, installation, and available incentives for renewable energy.

From the Renewable Energy Program's creation in 1998 through June 30, 2008, the Energy Commission has disbursed a total of $826 million[8,9] in support of program activities. More than $37 million is encumbered for projects in progress, with more than $86 million remaining to meet statutory requirements.[10] During the period of July 1, 2007, to June 30, 2008, approximately $109 million was deposited into the RRTF, and the Energy Commission disbursed more than $54 million to program participants.

The following summarizes Renewable Energy Program cumulative funds disbursed and market support accomplishments through June 2008:

- The Existing Renewable Facilities Program has helped 281 existing renewable facilities, representing 4,700 MW of renewable energy capacity, remain competitive or return to service with more than $267 million in funding. This disbursement also includes Existing Renewable Facilities Program funding for the Agriculture-to-Biomass Program. A total of $6 million was paid to biomass facilities that increased their use of qualified agricultural biomass for the 2003-2004 fiscal year.
- The New Renewable Facilities Program continued to support new renewable electricity generators. More than $74 million has been disbursed to 47 on-line projects. This has resulted in 489 MW of new renewable capacity added to California's electricity grid as a result of this program.

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[8] This dollar amount does not include the $461,681,784 refunded to the IOUs under SB 1036.

[9] Discussion of RRTF fiscal transactions does not include funds from the California Attorney General's Alternative Energy Retrofit Account (AGAERA) unless specifically noted. AGAERA provided match funds of $2.25 million for the Emerging Renewables Program's Solar Schools Program. This program disbursed rebates for the installation of solar photovoltaic systems for public and charter schools meeting certain eligibility requirements.

[10] Reserved funds are committed to meet legislative mandates, but not yet formally assigned to specific projects. Legislative mandates are as follows: rebates for emerging renewable energy system installations, generation from existing renewable facilities, and consumer education activities.

- Solar photovoltaic and wind energy systems installed on more than 27,880 homes and businesses are providing 123.1 MW of distributed capacity, bringing total Emerging Renewables Program rebate payments to more than $402 million.

  The Emerging Renewables Program for solar ended December 31, 2006, and was replaced by the NSHP. By June 30, 2008, a total of 250 NSHP applications, representing 3,640 residential solar systems, were in various stages of applying to the program. During the period July 1, 2007 through June 30, 2008, total payments of $667,778 were made for 51 completed systems.

- Consumers statewide have been educated about renewable energy and its benefits via public service announcements, events, radio and television, newspaper and magazine articles, brochures, and fact sheets. Since 1999, the Consumer Education Program has expended or encumbered nearly $17 million to support 3 public awareness campaigns funded through contracts; 21 grant projects awarded for renewable energy information and outreach activities; the development of an electronic tracking system, called the Western Renewable Energy Generation Information System (WREGIS), to address long-term RPS tracking needs; and other consumer education activities promoting renewable energy.

  As part of its current funding efforts, the Consumer Education Program is supporting a comprehensive NSHP public awareness campaign designed to encourage production home builders to participate in the NSHP and offer solar electric high-energy-efficiency homes as standard features to home buyers. The first part of the outreach effort has been to work with the IOUs' new construction programs and jointly outreach to production home builders, home buyers, and solar manufacturers. The campaign also focuses on developing partnerships to advance the NSHP's efforts.

- Among residential and small commercial customers who entered into direct access contracts with alternative providers, nearly 100 percent made renewable electricity purchases and were provided incentives through the Customer Credit Program. The discontinued program supported more than 200,000 customers purchasing renewable energy, with funds totaling over $65 million.

CHAPTER 3:
Program Activities and Results

Renewables Portfolio Standard

Background

The enactment of SB 1078 in September 2002 created California's RPS. SB 1078 required retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least 1 percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017.

In the *Energy Action Plan*[11] adopted in May 2003, the Energy Commission, the Consumer Power and Conservation Financing Authority,[12] and the CPUC encouraged accelerating the RPS goal by attaining the target of 20 percent renewables by 2010. The Energy Commission adopted this goal in its *2003 Integrated Energy Policy Report*,[13] which recommended that the state enact legislation to accelerate the RPS target to 20 percent by 2010. The 2004 *Integrated Energy Policy Report Update*[14] endorsed goals beyond 2010, and the *Energy Action Plan II,* adopted in September 2005, directed the evaluation and development of implementation paths for achieving renewable resource goals beyond 2010, including 33 percent renewables by 2020, in light of cost-benefit and risk analysis, for all load-serving entities.[15]

In September 2006, Governor Schwarzenegger signed SB 107, codifying the most ambitious RPS Program in the nation, the accelerated RPS goal of 20 percent renewables by 2010. SB 107 also requires each of the state's POUs to report to the Energy Commission on the status of implementing an RPS program and the progress made toward achieving its RPS goals.

AB 809, signed into law by Governor Schwarzenegger in October 2007, modified the eligibility requirements for hydroelectric facilities under the RPS. SB 1036, also approved by the Governor in October 2007, amended certain provisions of Public Resources Code Section 25743 and terminated the Energy Commission's authority to award SEPs to new renewable electricity generators for the above-market costs of renewable energy procured to meet the RPS. Further, SB 1036 required the Energy Commission to transfer the remaining SEPs to the three large IOUs

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[11] California Energy Commission, California Public Utilities Commission, and Consumer Power and Conservation Financial Authority, May 2003, *State of California Energy Action Plan*, www.energy.ca.gov/energy_action_plan/2003-05-08_ACTION_PLAN.PDF.

[12] The administrative operations of the Consumer Power and Conservation Financing Authority ceased in October 2004 and the remnants of its programs with phase-out activities were transferred to other state organizations.

[13] California Energy Commission, December 2003, *2003 Integrated Energy Policy Report*, 100-03-019, www.energy.ca.gov/reports/100-03-019F.PDF.

[14] California Energy Commission, November 2004, *Integrated Energy Policy Report 2004 Update*, 100-04-006CM, www.energy.ca.gov/reports/CEC-100-2004-006/CEC-100-2004-006CMF.PDF.

[15] California Energy Commission and California Public Utilities Commission, *State of California Energy Action Plan II*, September 2005, www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF.

and Bear Valley Electric Service and ordered the CPUC to ensure that each utility allocate the funds appropriately. In April 2008, the CPUC implemented the ratemaking aspects of SB 1036 in a draft Resolution (E-4160). The criteria and guidelines for approving requests for these funds for eligible renewable energy contracts procured through competitive solicitations, now termed Above-Market Price Referent Funds, were discussed at a CPUC workshop in May 2008.

On June 30, 2008, the Energy Commission held a staff workshop to gather stakeholder comments on using feed-in tariffs to support development of RPS-eligible generation larger than 20 MW (a feed-in tariff offers fixed-price payments for energy from renewable sources). As recommended in the *2007 Integrated Energy Policy Report*, the discussion at the workshop informed the development of a report, *Exploring Feed-In Tariffs for California: Feed-In Tariff Design and Implementation Issues and Option*s, which was released on June 20, 2008,[16] as a draft report. A final report is planned for release at the end of 2008.

The Energy Commission's responsibility to certify facilities as eligible for the RPS and develop an accounting system to track and verify RPS procurement resulted in the launch of the WREGIS in June 2007. WREGIS is an electronic system that tracks and verifies renewables generation throughout the Western Interconnect. Beginning January 2008, the Energy Commission requires RPS participants—certified facilities, retail sellers, procurement entities, and third parties—to participate in WREGIS as part of RPS compliance, except for the three large IOUs, which are required to participate by May 1, 2008.

The next section provides a discussion of the Energy Commission's and the CPUC's roles and activities in designing and implementing the RPS, the IOUs' progress to date procuring renewables, and the progress in implementing WREGIS. The Energy Commission and the CPUC continue to work collaboratively to implement the program.

Energy Commission's Renewables Portfolio Standard Roles

The Energy Commission implements the RPS through guidelines that were originally adopted in spring 2004, with revisions adopted in August 2004, April 2006, March 2007, and January 2008. The two guidebooks related to implementing the RPS Program are described as follows:

- The *Renewables Portfolio Standard Eligibility Guidebook*[17] describes the requirements and process for certifying eligible renewable energy resources for California's RPS. The *Renewables Portfolio Standard Eligibility Guidebook* also describes how the Energy Commission tracks and verifies compliance with the RPS using an interim generation tracking process until data for a complete calendar year is available using WREGIS.

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[16] KEMA, prepared for the California Energy Commission, June 2008, *Exploring Feed-In Tariffs for California: Feed-In Tariff Design and Implementation Issues and Option*s, CEC-300-2008-003-D, www.energy.ca.gov/2008publications/CEC-300-2008-003/CEC-300-2008-003-D.PDF.

[17] California Energy Commission, January 2008, *Renewables Portfolio Standard Eligibility Guidebook*, CEC-300-2007-006-ED3-CMF. www.energy.ca.gov/2007publications/CEC-300-2007-006/CEC-300-2007-006-ED3-CMF.PDF.

- The *Overall Program Guidebook for the Renewable Energy Program*[18] describes how the Renewable Energy Program is administered and includes information on requirements that apply to all Renewable Energy Program elements, including the RPS. The *Overall Program Guidebook* provides general information on applying for RPS certification and appealing the Energy Commission's decisions regarding revocation of RPS certification.

While the *Guidebooks* reflect current program requirements, the Energy Commission recognizes the need to periodically revise them to reflect market and regulatory developments and to incorporate the lessons learned from experience implementing the RPS.

In September 2007, Energy Commission staff proposed changes to update the *Renewables Portfolio Standard Eligibility Guidebook* (March 2007) and the *Overall Program Guidebook* (March 2007) to reflect changes in law as a result of SB 1036 and AB 809. The Energy Commission solicited comments on the staff draft *Guidebooks* and held a Renewables Committee workshop on September 26, 2007, to receive comments. After careful consideration of written and verbal comments and additional technical and policy analysis, the Energy Commission adopted the revised *Guidebooks* at its December 19, 2007, business meeting. The changes, which are summarized below, went into effect upon adoption of the revised *Guidebooks*, which were released in January 2008.

The *Renewables Portfolio Standard Eligibility Guidebook* was updated to:

- Remove the provisions for certifying facilities as eligible for SEPs and remove references to SEPs throughout the *Renewables Portfolio Standard Eligibility (RPS Eligibility) Guidebook*.
- Require that effective January 1, 2008, all participants in California's RPS must register with and use the WREGIS as part of RPS compliance.
- Add small IOUs to the definition of "retail sellers."
- Add certification for distributed generation facilities that would only be eligible for RPS if some or all of the energy produced is sold through a standard contract/tariff executed under Public Utilities Code 399.20 (which directs the IOUs to offer the tariff for procurement of energy production from renewable energy resources at public water and wastewater facilities and allows that procurement to count toward the IOUs' RPS targets), as implemented through the CPUC Decision 07-07-027 (which expanded the tariff from water and wastewater customers to other customers), or sold through a comparable standard contract/tariff approved by a local POU, or if the facility is owned by a utility and meets other requirements.
- Modify the definition of a conduit hydroelectric facility to remove from the eligibility requirements the previous reference to federal law, and to further define an eligible conduit hydroelectric facility as one that uses for its generation only the hydroelectric potential of an existing pipe, ditch, flume, siphon, tunnel, canal, or other manmade

[18] California Energy Commission, January 2008, *Overall Program Guidebook*, CEC-300-2007-003-ED2-CMF, www.energy.ca.gov/2007publications/CEC-300-2007-003/CEC-300-2007-003-ED2-CMF.PDF.

conduit that is operated to distribute water for a beneficial use (as required under AB 809).

- Change the eligibility criteria for small hydro and conduit hydro so that a facility becoming commercially operational after January 1, 2006, must not cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow.
- Change the eligibility criteria for efficiency improvements that would cause small hydro and conduit hydro facilities to exceed the 30 MW size limit for RPS eligibility such that the improvements must be made after January 1, 2008, and must not cause an adverse impact on instream beneficial uses or cause a change in the volume or timing of streamflow.
- Add the RPS certification category and eligibility requirements for the incremental generation of hydroelectric facilities due to eligible efficiency improvements, regardless of the facility's capacity.
- Clarify that although the out-of-state delivery requirements do not typically apply to multijurisdictional electric corporations that serve retail end-use customers outside California and have 60,000 or fewer customer accounts in California under Public Utilities Code Section 399.17, this exception applies only to situations wherein these utilities procure energy to meet their own RPS obligations.
- Clarify that eligible electricity may be delivered into California at a different time than when the RPS-certified facility generated electricity and may be generated at a different location than that of the RPS-certified facility, and provide examples of eligible banking and shaping contract delivery structures. Describe the Energy Commission's pre-approval process of eligible contract delivery structures as part of the CPUC's RPS contract review process.
- Remove the two-year renewal requirement for RPS certification and add that RPS eligibility is effective for the life of the facility.

As part of implementation of a tracking system for RPS-eligible procurement, the Energy Commission adopted its second *Renewables Portfolio Standard Procurement Verification Report* (*Verification Report*) in August 2007.[19] This report verifies RPS procurement for the 2004 and 2005 calendar years, provides data on the IOUs' progress toward the RPS procurement goals, and is intended to help the CPUC determine the IOUs' compliance with the RPS. The *Verification Report* for the 2006 calendar year is expected to be released near the end of 2008.

Although WREGIS began operations in June 2007, the Energy Commission will not rely entirely on WREGIS data for the *Verification Report* until 2009, when WREGIS is expected to provide generation data for a portion of 2008 for the three large IOUs and for the full calendar year of

[19] California Energy Commission, August 2007, *Renewables Portfolio Standard Procurement Verification Report*, CEC-300-2007-001-CMF, www.energy.ca.gov/2007publications/CEC-300-2007-001/CEC-300-2007-001-CMF.PDF.

2008 for all other RPS participants. As required by SB 107, the CPUC cannot authorize the use of renewable energy credits for RPS compliance until the Energy Commission and the CPUC determine that the tracking system is operational, that it is capable of verifying eligible generation and delivery, and that the generation is not double-counted. The Energy Commission and the CPUC initiated this work by releasing a draft report and holding a workshop in March 2008. This process is discussed in greater detail in the section below, "Renewables Portfolio Standard Tracking and Verification–WREGIS."

As of June 30, 2008, 697 facilities are certified or pre-certified as eligible for the RPS, representing a total of 20.17 gigawatts of renewable capacity. Of that generating capacity, 11.34 gigawatts is proposed capacity from 110 pre-certified facilities. These data do not reflect activity in the application queue.

California Public Utilities Commission's Renewables Portfolio Standard Implementation

The CPUC is charged with implementing various components of the RPS including:

- Setting procurement baselines and targets.
- Approving, rejecting, or modifying procurement plans on how to meet RPS targets.
- Developing a market price referent, which is an estimate of the cost, over a 10-, 15-, or 20-year period, to own and operate a new natural gas facility and earn a reasonable rate of return. Renewable contracts priced at or below the market price referent are considered *per se* reasonable. The CPUC determines an annual market price referent to coincide with each RPS solicitation cycle.
- Developing a least-cost, best-fit process for the IOUs to use to evaluate bids received in response to their annual solicitations for RPS-eligible energy.
- Setting rules for flexible compliance.
- Standardizing contract terms.
- Approving or rejecting utility RPS contracts.
- Ensuring competitiveness of the IOUs' RPS solicitations.
- Developing rules applicable to electric service providers, community choice aggregators, and small and multijurisdictional utilities.
- Evaluating compliance with RPS targets including setting and enforcing penalties for noncompliance.
- Developing and administering the Above-Market Price Referent Funds program.

CPUC activity in the 2007-2008 fiscal year included adopting the market price referent values for use in the 2007 RPS solicitations.[20] The CPUC issued a ruling on February 8, 2008, requesting

[20] CPUC Resolution E–4118, October 4, 2007.

workshop comments on the 2008 market price referent.[21] Also in February 2008, the CPUC conditionally accepted the IOUs' 2008 RPS procurement plans,[22] and in July 2008 the CPUC issued an Amended Scoping Memo ruling that the five RPS-obligated load serving entities must file 2009 RPS procurement plans.[23]

During fiscal year 2007-2008, the Energy Commission and the CPUC continued their collaboration during the CPUC's ongoing RPS implementation by addressing outstanding issues such as adopting additional standards for procurement contracts for all load-serving entities, developing implementation rules for participation of electric service providers and community choice aggregators, and refining RPS rules already in place.

The CPUC continued to refine rules for implementing AB 1969 for water and wastewater facilities to sell renewable electricity generated from RPS-eligible renewable resources to electrical corporations with a price set at the market price referent.[24] The standard contracts apply to water and wastewater facilities 1.5 MW or smaller (1.0 MW and smaller for PacifiCorp, Sierra, Pacific Power Company, and Bear Valley Electric Service). In Decision 07-07-027, issued on July 26, 2007, the CPUC expanded eligibility to all RPS-eligible renewable resources in PG&E and SCE territories, with a combined total cap of 228.487 MW for nonwater and nonwastewater facilities. On February 14, 2008, the CPUC approved the final tariffs and standard contracts and set an immediately effective date of the tariffs in Resolution E-4137.

The CPUC is investigating the expansion of feed-in tariffs for facilities up to 20 MW. On June 5, 2008, the CPUC issued an Amended Scoping Memo regarding tariff and standard contract implementation for RPS generators, with the project size increase of up to 20 MW being one of the issues upon which the CPUC invited comments.[25] Increasing the feed-in tariff project size cap is consistent with the Energy Commission's recommendation in the *2007 Integrated Energy Policy Report* that the CPUC implement a feed-in tariff for all RPS-eligible renewable facilities up to 20 MW in size. The CPUC expects to issue a decision on this issue in fiscal year 2008-2009.

As discussed above, SB 1036 eliminated the Energy Commission's authority to award SEP funds, refunding to the IOUs all unspent SEP funds and authorizing the CPUC to develop and oversee a new method to allow IOUs to recover through rates their costs for RPS procurement that are in excess of the market price referent. The Energy Commission returned unspent SEP funds to the CPUC in March 2008. For more discussion on SEPs, please refer to the section, "New Renewable Facilities Program."

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[21] CPUC, Administrative Law Judge's Ruling Requesting Post-Workshop Comments on 2008 Market Price Referent for the Renewables Portfolio Standard Program, May 20, 2008. R.06-02-012.
[22] CPUC Decision 08-02-008, February 14, 2008, R.06-05-027.
[23] CPUC, Amended Scoping Memo And Ruling of Assigned Commissioner Regarding 2009 RPS Procurement Plans, June 20, 2008. R.06-05-027.
[24] CPUC, Decision 07-07-027, July 26, 2007. R.06-05-027.
[25] CPUC, Amended Scoping Memo and Ruling of Assigned Commissioner Regarding Phase 2 of Tariff and Standard Contract Implementation for RPS Generators, June 5, 2008. R.06-05-027.

To implement SB 1036, the CPUC developed the Above-Market Price Referent Fund and proposed eligibility criteria and guidelines in Draft Resolution E-4160, issued on March 12, 2008. SCE, PG&E, SDG&E, the Center for Energy Efficiency and Renewable Technologies, and the California Wind Energy Association requested bifurcation of the Draft Resolution citing, among other things, a lack of a formal rulemaking process.[26] The CPUC subsequently bifurcated the Draft Resolution and later adopted Final Resolution E-4160 on April 15, 2008, which returned the SEP funds to the IOUs but deferred definition of AMF eligibility criteria and guidelines until after a workshop held on May 29, 2008, and further review of public comments.

On September 5-7, 2007, the CPUC held a workshop on tradable renewable energy credits and what role renewable energy credits could play in RPS compliance. Also discussed were potential compliance rules for tradable renewable energy credits if authorized for use. In addition to the workshop, there have been a variety of opportunities to comment on the attributes of renewable energy credits.

Investor-Owned Utilities' Renewables Portfolio Standard Procurement

During fiscal year 2007-2008, PG&E, SDG&E and SCE submitted 31 contracts for RPS procurement to the CPUC for approval, some of which were approved by the CPUC during that timeframe, as discussed below (the range in capacities and generation reflects build-out options).

PG&E Procurement Activity

In fiscal year 2007-2008, PG&E sought CPUC approval for 13 contracts for RPS procurement; the CPUC approved four during this fiscal year.

- The first advice letter submitted during the fiscal year was in July 2007. Advice letter 3090-E requested approval for a 2006 RPS contract for an on-line new 85 MW wind facility with 265 GWh annually.
- Also that month, PG&E submitted Advice Letter 3092-E requesting approval of a new 553.5 MW (1,388 GWh annually) solar thermal project from its 2005 RPS solicitation.
- Advice Letter 3143-E was submitted in October 2007 for a 2007 bilateral contract for 150 MW (509 GWh annually) of new wind capacity.

By April 2008, the CPUC had approved all of the above contracts.

- In November 2007, PG&E submitted Advice Letter 3150-E to the CPUC requesting approval of a 2007 bilateral contract for a new solar thermal facility with a capacity of 177 MW (388 GWh of annual generation).
- In December 2007, PG&E submitted Advice Letter 3181-E requesting approval of 2 MW of new ocean wave capacity (4 GWh annually) as a result of the 2006 RPS Solicitation; this project is expected to be on-line in 2012.

[26] Motion of the Center for Energy Efficiency and Renewable Technologies for Expedited Stay and Withdrawal of Draft Resolution E-4160, March 28, 2008. R.06-02-012.

- Approval of a 2008 bilateral contract was sought with Advice Letter 3211-E in February 2008 for an existing geothermal facility with 57 MW of capacity (500 GWh annually) that is already on-line. The CPUC granted approval in April 2008.
- Also in April 2008, Advice Letter 3243-E was submitted requesting approval of 2008 bilateral contracts for five new solar thermal facilities with total capacities of 500 MW to 900 MW.[26] These facilities, which are not yet on-line, are expected to generate a combined estimate of 1,230 GWh to 2,214 GWh annually.
- With Advice Letter 3280-E, PG&E sought approval of two contracts from its 2007 RPS solicitation for new solar thermal projects each with 53.4 MW of capacity and 350 GWh of generation annually.
- In December 2007, PG&E submitted Advice Letter 3183-E for approval of a bilateral contract for a new (but on-line) 50 MW out-of-state wind facility. However, this capacity is not included in this section on IOU RPS Procurement; the CPUC rejected the contract without prejudice in May 2008 because the contract did not comply with the RPS procurement guidelines.

SDG&E Procurement Activity

In fiscal year 2007-2008, SDG&E submitted five advice letters to the CPUC requesting approval of seven contracts; only one was approved by the end of the fiscal year.

- The first, Advice Letter U 902-E, was submitted in September 2007 and sought approval for a new 1.5 MW biomass facility (12 GWh annually). The contract, a result of a 2006 All-Source Solicitation, was approved in January 2008.
- With Advice Letter 1947-E, submitted in November 2007, SDG&E requested CPUC approval of two contracts from the 2006 RPS solicitation. Both were for new 5 MW biomass facilities (42 GWh annually from each).
- In February 2008, Advice Letter 1963-E was submitted for approval of a 2008 bilateral contract for a new 40 MW geothermal facility (319 GWh annually).
- In early June 2008, Advice Letter 1997-E was submitted requesting approval of two bilateral contracts for new wind facilities with capacities of 106.5 MW and 103.5 MW (325 GWh and 310 GWh annually, respectively).
- SDG&E filed Advice Letter 2000-E, its last of the 2007-2008 fiscal year, requesting approval of a bilateral contract for a restarted 11 MW (90 GWh annually) biomass project.

SCE Procurement Activity

During the 2007-2008 fiscal year, SCE sought approval of 11 contracts, six of which were approved during this year.

- July 2007 saw the most activity with one application and two advice letters seeking approval for a total of seven contracts. The application was submitted for a new 1,500 MW to 1,550 MW wind facility representing 4,730 GWh to 4,888 GWh of annual generation, the result of the 2005 RPS solicitation. Advice Letter 2137-E requested

approval of a 50 MW to 100 MW (416 GWh to 832 GWh annually) new geothermal facility from SCE's 2006 RPS Solicitation. Both of these contracts were subsequently approved by the CPUC.

- With Advice Letter 2143-E, SCE sought approval of four contracts in July 2007, again from its 2006 RPS Solicitation. These projects included two new wind facilities with capacities of 200 MW to 250 MW and 42 MW to 81 MW (578 GWh to 723 GWh and 96 GWh to 185 GWh annually, respectively). The remaining two projects were a new 0.99 MW solar photovoltaic facility with 2 GWh of generation annually and a 1.6 MW repowered biogas facility expected to produce 13 GWh annually. The CPUC approved these contracts in May 2008.
- In December 2007, Advice Letter 2198-E was submitted for three contracts from the 2007 RPS solicitation. These contracts included a 30 MW to 100 MW (250 GWh to 832 GWh annually) new geothermal facility, a 79.5 MW to 85.5 MW (197 GWh to 212 GWh annually) new wind facility, and a 7.5 MW to 21 MW (18 GWh to 50 GWh annually) new solar photovoltaic facility.
- In January 2008, Advice Letter 2203-E was the last submittal by SCE during the 2007-2008 fiscal year, seeking approval for two 2008 bilateral contracts. Both contracts were for new biogas facilities with capacities of 2 MW each (12 GWh annually for each).

CPUC Approval of IOU Contracts

The CPUC approved a total of 15 RPS contracts during the 2007-2008 fiscal year that were submitted by the IOUs in this or previous fiscal years, as summarized below.

- In August 2007, the CPUC approved two contracts from 2007 bilateral agreements. One contract was for SCE's 15 MW restart biomass project (105 GWh annually) and one was for PG&E's new biogas project with a capacity of 2 to 44.38 MW (15 to 389 GWh annually).
- In November 2007, a PG&E contract for a new 85 MW wind facility was approved as a result of the 2006 RPS solicitation as well as an SCE contract for an existing 225 MW geothermal project from the 2005 RPS solicitation. These projects represent 265 GWh and 1,971 GWh of annual generation, respectively.
- In December 2007, four PG&E contracts were approved. Three contracts resulted from the 2006 RPS Solicitation—a new 25.5 MW geothermal project (212 GWh annually but currently inactive) and two new solar photovoltaic projects with capacities of 2 MW and 5 MW (5 GWh and 9 GWh annually, respectively). The fourth project has 553.5 MW of new solar thermal capacity (1,388 GWh annually) and is a result of the 2005 RPS solicitation.
- An SDG&E contract for a new biomass facility was approved in January 2008 as a result of the 2006 All Source Solicitation. This contract added 1.5 MW of capacity (12 GWh of annual generation) to SDG&E's portfolio.
- In March 2008, the CPUC approved a new geothermal project with a capacity of 50 MW to 100 MW (416 GWh to 832 GWh annually) as a result of SCE's 2006 RPS Solicitation.

- In April 2008, two PG&E bilateral contracts were approved for a new 150 MW (509 GWh annually) wind facility and an existing 57 MW (500 GWh annually) geothermal project.
- The last contracts approved in the 2007-2008 fiscal year were executed with SCE. The first contract was for a new wind facility with 1,500 MW to 1,550 MW of capacity (4,730 GWh to 4,888 GWh annually) that resulted from the 2005 RPS solicitation. The last two contracts were both from the 2006 RPS solicitation and were for a new 0.99 MW solar photovoltaic project and a repowered 1.6 MW biogas project representing 2 GWh and 13 GWh of annual generation, respectively.

A list of IOU-RPS contracts considered for CPUC approval in the 2007-2008 fiscal year is provided in the *2008 Annual Report Appendix*, *Appendix A*, located on the Energy Commission's website at www.energy.ca.gov/renewables/quarterly_updates/index.html. A complete listing of IOU-RPS contracts from 2002 to date is available on the Energy Commission's website at www.energy.ca.gov/portfolio/IOU_CONTRACT_DATABASE.XLS.

Table 3 lists the RPS contracts for new, repowered, or restarted renewable energy that have been approved by, or submitted to, the CPUC as of July 9, 2008 (113 of these contracts have been signed since 2002). As shown, IOUs have signed contracts for 6,592 MW to 8,790 MW of new, repowered, or restarted renewable energy projects (again, range reflects build-out options) from competitive solicitations and through bilateral negotiations between the utility and the developer, with 480 MW of these projects currently on-line. In terms of percentages by capacity, 8 percent of the minimum capacity has currently begun operations while 6 percent of total maximum capacity is on-line. Of the 98 active contracts, only 18 have presumed pricing above the applicable market price referent. Of the 38 contracts with activity during the 2007-2008 fiscal year, 15 were assumed to be priced above the applicable market price referent. Assuming no further contract failure, projected energy deliveries from all new, additional repower and restarted projects is expected to be 18,365 GWh to 25,694 GWh, while the total deliveries, once on-line, is expected to range from 23,297 GWh to 31,137 GWh.

Table 3: Capacity from IOU RPS Contracts for New, Repowered, or Restarted Renewables by Technology for Contracts Signed Since 2002 (MW)

	PG&E	SCE	SDG&E	Total
Wind	584	2,034 – 2,387	567	3,185 – 3,538
Biogas	9 – 99	12 – 13	24	45 – 136
Biomass	102 – 122	44 – 69	97	242 – 287
Geothermal	466 – 601	335 – 545	60	861 – 1,206
Ocean	2	0	0	2
Small Hydropower	1	0	5	6
Solar Thermal	1,337 – 1,737	500 – 850	399 - 999	2,236 – 3,586
Solar Photovoltaic	7	8 – 22	0	15 – 29
Total	**2,508 – 3,153**	**2,933 – 3,886**	**1,152 – 1,752**	**6,592 – 8,790**

Capacity does not include contracts that have expired or been cancelled. For repowered capacity, includes total capacity, not just additional expected capacity. Totals may not sum due to rounding.
Source: California Energy Commission, Database of IOU Contracts for Renewable Generation, July 9, 2008 update. www.energy.ca.gov/portfolio/IOU_CONTRACT_DATABASE.XLS.

Table 4 shows the percentage of retail sales served by RPS-eligible resources for each IOU for 2001, 2003, 2004, 2005, 2006 and 2007. Total statewide illustrates the percentage of total generation provided by renewables for all utilities in the state, including the IOUs, local POUs, electric service providers, and small and multi-jurisdictional utilities. Although the data is informative about the IOUs' progress toward meeting the RPS, actual compliance is determined by the CPUC and includes consideration of its rules for flexible compliance. The relatively slower progress that the state is making overall toward meeting the 20 percent RPS target underscores the important role the non-IOUs play in California's success in achieving the RPS goal by 2010.

Table 4: California Investor-Owned Utilities and Statewide Progress Toward 20 Percent Renewables by 2010 (Percent Renewables)

IOU	2001	2003	2004	2005	2006	2007
PG&E*	8.9%	12.4%	11.6%	11.9%	11.9%	11.4%
SCE*	14.8%	17.7%	18.2%	17.2%	16.0%	15.7%
SDG&E*	1.0%	3.7%	4.3%	5.2%	5.3%	5.2%
IOUs Combined*	**10.9%**	**14.0%**	**13.9%**	**13.7%**	**13.1%**	**12.7%**
Total Statewide	**10.5%**	**10.4%**	**10.2%**	**10.7%**	**10.9%**	**11.8%**

*Represents RPS-certified retail sales.

1. Sources for 2001, 2003, 2004, and 2005 data: California Energy Commission, August 7, 2007, *Renewables Portfolio Standard Procurement Verification Report (Tables 7, 15, and 20)*, CEC-300-2007-001-CMF, located at www.energy.ca.gov/2007publications/CEC-300-2007-001/CEC-300-2007-001-CMF.PDF.
2. *2006 data was submitted by the IOUs in RPS Track Forms, to be verified in the forthcoming *2006 RPS Procurement Verification Report*.
3. 2007 RPS track forms were not available at the time of this publication. The 2007 data listed above for the IOUs was submitted to the CPUC from the IOUs as part of the March 2007 RPS Compliance Filings (Rulemaking 06-05-027.)
4. Total statewide percentages include generation data from the three large IOUs, electric service providers, small and multijurisdictional utilities, and local POUs. The data source for the total statewide percentages is the 1983-2005 California Electricity Generation database located at www.energy.ca.gov/electricity/ELECTRICITY_GEN_1983-2005.XLS. The total statewide percentage for 2007 is data from the 2007 Net System Power Report.

Although the total statewide data is incomplete because some entities have failed to report, it represents data from entities serving approximately 95 percent of total statewide retail sales. Since the IOUs first executed RPS contracts in 2002, the trend in failure and delay of IOU RPS contracts has not been encouraging. As of March 2007, 50 percent of IOU RPS generation (gigawatt hours [GWh] per year) under contract with new, repowered, or restarted facilities was canceled or delayed. Since then, new contracts have been signed for large amounts of energy, bringing the failure rate to 27 percent. It is too soon to tell what portion of these new projects will be cancelled or delayed. Similarly, as of March 2007, about 33 percent of the number of contracts signed since 2002 had been cancelled or delayed. In October 2007, contract failure by this measure had increased slightly to 35 percent.

Table 5 presents the estimated minimum and maximum renewable energy capacity by technology for RPS contracts that the IOUs submitted for CPUC approval during fiscal year 2007-2008. These data show the recent growth in contracted capacity from wind and, to a lesser extent, solar thermal resources. About two-thirds of the IOUs' total wind capacity from contracts signed since 2002 is from contracts submitted in the 2007-2008 fiscal year. Of the total estimated capacity from SCE's wind contracts signed since 2002, about 80 percent is from the 2007–2008 fiscal year, with PG&E and SDG&E's capacity from wind contracts for this fiscal year representing about 40 percent of their total wind capacity for contracts signed since 2002. Although SCE and SDG&E did not submit any recent solar thermal contracts, all of PG&E's contracted capacity from this resource is from a contract submitted to the CPUC for approval in the 2007-2008 fiscal year, which represents about half of the IOUs' total contracted capacity from solar thermal resources.

Table 5: Renewable Capacity by Technology for IOU RPS Contracts Submitted for CPUC Approval During FY 2007-2008 (MW)

	PG&E	SCE	SDG&E	Total
Wind	235	1,822 – 1,967	210	2,267 – 2,412
Biogas	0	6	0	6
Biomass	0	0	23	23
Geothermal	57	80 – 200	40	177 – 297
Ocean	2	0	0	2
Small Hydropower	0	0	0	0
Solar Thermal	1,337 – 1,737	0	0	1,337 – 1,737
Solar Photovoltaic	0	8 – 22	0	8 – 22
Total	**1,631 – 2,031**	**1,916 – 2,194**	**273**	**3,819 – 4,498**

PG&E capacity does not include Advice Letter 3183-E for a bilateral contract for a new (but on-line) 50 MW out-of-state wind facility. The CPUC rejected this contract without prejudice in May 2008 because the contract did not comply with CPUC RPS procurement requirements. Totals may not sum due to rounding.

Source: California Energy Commission, Database of IOU Contracts for Renewable Generation, July 9, 2008, update.

www.energy.ca.gov/portfolio/IOU_CONTRACT_DATABASE.XLS

A comparison of Tables 3 and 5 shows that estimated RPS capacity under IOU contracts submitted for approval during fiscal year 2007–2008 represents from 51 to 60 percent of total estimated capacity under IOU contracts signed since 2002. Both PG&E and SCE submitted contracts during this fiscal year that represent about two-thirds of their total RPS capacity from contracts signed since 2002, while SDG&E submitted contracts this fiscal year that represent about one-fifth of its total capacity under RPS contracts signed during that timeframe.

Publicly Owned Utilities' Renewables Portfolio Standard Procurement

Local POUs play a critical role in meeting the state's renewable energy goals. According to preliminary findings, since 2002 POUs have entered into contracts for 1,855 MW of nameplate capacity, equal to 12.3 percent of statewide POU retail sales in 2006.

To track the efforts of the state's POUs in meeting their RPS requirements, the Energy Commission is developing a database with information on POUs' RPS policies, renewable energy deliveries, renewables solicitations, and new renewable energy contracts signed since 2002. Information in the database is being compiled from POUs' formal filings to the Energy Commission, including their Energy Commission-POU-RPS forms and annual reports for the Power Source Disclosure Program, as well as a variety of other publicly available sources. The Energy Commission anticipates publishing a consultant report to summarize the information contained in the database and gauge the POUs' RPS policies and their efforts in implementing these policies. The Energy Commission expects to publish the report and post the database on

its website in the third quarter of 2008. The database will be regularly updated as new information becomes available.

In 2007, six new renewable energy contracts and POU-owned projects, totaling 148 MW in nameplate capacity, began delivery, including:

- Anaheim's two-year contract with Brea Power Partners for energy delivered from a pre-existing 5 MW landfill gas project in the city of Brea.
- Los Angeles Department of Water & Power's five-year contract with Powerex for energy delivered from multiple pre-existing small hydro facilities, totaling 50 MW nameplate capacity, located in the Pacific Northwest.
- Pasadena's 25-year contract with Minnesota Methane for deliveries from pre-existing landfill gas projects in West Covina and Visalia, totaling 9 MW.
- Sacramento Municipal Utility District's 63 MW expansion to its Solano Wind Project.
- Sacramento Municipal Utility District's contract with Sacramento County for energy delivered from a new 5.7 MW expansion to the landfill gas project at Kiefer landfill.
- Sacramento Municipal Utility District's 10-year contract with Sierra Pacific Industries for energy delivered from a new 15 MW biomass project at a wood products facility in Northern California.

Renewables Portfolio Standard Tracking and Verification–WREGIS

The Energy Commission, together with APX, Inc., (APX) and the Western Electricity Coordinating Council (WECC), implemented and put into operation the WREGIS, a regional renewable energy certificate tracking and registry system. WREGIS issues and tracks WREGIS Certificates to support verification of compliance with California's RPS and with regulatory and voluntary renewable energy programs in the greater Western Interconnect.

The WREGIS software application became available for use on June 25, 2007, and the WREGIS staff began accepting applications for account holder registration. As of June 30, 2008, the system has never failed to meet the requirements for functionality and service as detailed in the contract.

The 2006 enactment of SB 107 requires the Energy Commission and the CPUC to conclude that the tracking system is operational before the CPUC can authorize the use of renewable energy credits to satisfy a retail seller's RPS target. To be considered operational, the tracking system must be capable of independently verifying that electric generation by renewable energy resources has been generated and delivered to retail sellers and that the system can ensure that the renewable energy credits shall not be double counted within the service territory of WECC. The Energy Commission worked with the CPUC on a process for both agencies to determine that the Energy Commission's RPS tracking system is operational, and the Energy Commission released a Draft Joint Agency Staff Report titled *Tracking System Operational Determination (Draft*

Report)[27] and held a workshop to solicit public input on the Draft Report in March 2008. The *Draft Report* details the criteria that the agencies will use to determine whether the tracking system is to be considered operational as required by the statute. The CPUC will release a draft resolution on a revised *Draft Report* before both agencies adopt a *Final Report*, anticipated in the third quarter of 2008, that will conclude whether all criteria have been met and the tracking system is operational.

WREGIS consists of two components: a renewable energy registry and tracking system and its technical infrastructure, provided by APX in Santa Clara, and the administrative operations infrastructure and staff to develop and administer the WREGIS program, provided by WECC at its headquarters in Salt Lake City, Utah. The following are highlights of WREGIS/APX activities in fiscal year 2007-2008.

- The Energy Commission notified APX of the final approval of the WREGIS software on October 5, 2007, after a 90-day acceptance period to determine whether the system functionality and services were working as planned.
- APX implemented several changes to the system throughout the fiscal year that were approved through the WREGIS change control process. The Energy Commission is represented on the Change Control subcommittee as well as on the WREGIS Committee (the governance committee of WREGIS), which will issue final approval.
- APX provided a one-time *Reliability Test Report* in March 2008, as well as Monthly Performance Status Reports, to the Energy Commission. These reports demonstrated that APX and the WREGIS software met the standards of performance in the Energy Commission/APX contract.

The WREGIS Committee provides policy guidance and decision making related to WREGIS activities, while the Energy Commission acts as the financial backstop for WECC with respect to WREGIS activities. The Energy Commission and WECC act under a $2.2 million contract, which formalizes the agreement to fund WREGIS activities at WECC and defines the roles and responsibilities of the Energy Commission and WECC. WREGIS staff at WECC is responsible for hosting WREGIS and administering the WREGIS program.

The WREGIS Committee is also responsible for ensuring that WECC can meet its commitment to have WREGIS self-funding within three years. To meet this goal, the WREGIS staff began collecting user fees on January 1, 2008, to offset costs. These fee levels were chosen carefully to achieve the goals and oversee the operations of WREGIS in a manner that is fair, credible, consistent with the public interest, and responsive to the needs of participants. However, revenues and costs will need to be monitored carefully to determine whether fee levels need to be periodically adjusted.

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[27] California Energy Commission and California Public Utilities Commission, March 2008, *Tracking System Operational Determination*, Draft Joint Agency Staff Report, CEC-300-2008-001-SD, www.energy.ca.gov/2008publications/CEC-300-2008-001/CEC-300-2008-001-SD.PDF.

The following milestones for the WREGIS project occurred in fiscal year 2007-2008:

- Visionary Integration Professionals (the program development project manager) and Public Sector Consultants (the independent project oversight consultant) completed their work on the WREGIS project in August 2007. Visionary Integration Professionals acted as the lead to establish the administrative operations at WECC. Public Sector Consultants identified, quantified, and recommended measures to reduce or eliminate potential risks to the WREGIS project.
- A new WREGIS director began work at WECC in November 2007.
- Personal Enterprise, Inc., (the Quality Assurance and Configuration Management Consultant) completed its contract in November 2007. This consultant ensured that the project's products and processes conformed to its specified requirements and ensured that all work products received or generated by the project were adequately documented, stored, and managed.
- The WREGIS staff conducted in-person training at WECC headquarters on multiple dates. The training sessions allowed potential and current users to understand the system functionality and WREGIS processes and procedures.
- The WREGIS Terms of Use (that is, the WREGIS Account Holder Agreement), first published on June 20, 2007, was revised and republished on May 1, 2008, after extensive input and suggestions from current and prospective WREGIS users. All users must sign this agreement before becoming account holders in WREGIS.
- As of June 30, 2008, 124 account holders were registered in WREGIS, with another 24 pending complete registration. In addition, WREGIS staff has registered 224 active generators with an additional 320 pending approval. Generally, account holders and generators are in pending status because they have yet to submit all necessary documentation, a signed Terms of Use (account holder agreement), or the annual fee.
- PG&E, SCE, and SDG&E met the deadline imposed by the Energy Commission for the RPS program and registered for WREGIS by May 1, 2008.
- The WREGIS Terms of Use was further revised based on input from the California Independent System Operator and other balancing authorities and released for public comment on June 23, 2008. This amended Terms of Use received final approval in early August 2008. The revised agreement will replace earlier versions and will apply to all WREGIS account holders.

Ongoing assistance with WREGIS, through a work authorization begun in 2005, has also been provided by the Energy Commission's technical support contractor, KEMA, Inc. Of the $198,071 committed for WREGIS activities under the Energy Commission's contract with KEMA, $9,982 was spent in fiscal year 2007-2008.

Table 6 shows cumulative funding and expenditures for WREGIS development and implementation as of June 30, 2008.

Table 6: WREGIS Operations
Cumulative Funding and Expenditures as of June 30, 2008

Description	Funding	Expenditures as of 6/30/2008
APX, Inc., System Development and Technical Operations Contractor	$3,277,702	$1,898,772
Establish and operate WREGIS at the WECC	$2,202,750	$890,053
Knowledge Structures, Inc.[28]	$249,250	$232,219
KEMA-XENERGY technical support[29]	$70,293	$70,293
KEMA technical support[30]	$236,226	$185,320
Enterprise Networking Solutions[31]	$193,200	$193,200
Visionary Integration Professionals	$198,000	$238,000*
Public Sector Consultants	$55,100	$55,100
Personal Enterprises, Inc.	$115,200	$154,560**
TOTAL	**$6,597,721**	**$3,917,517**

*$198,000 from Consumer Education; $40,000 from ERPA
**$115,200 from Consumer Education; $39, 360 from ERPA
Source: California Energy Commission WREGIS Operations database

Additional details for fiscal year 2007-2008 WREGIS development and implementation expenditures and encumbrances are reported in the section and *Appendix F* of its funding source, the Consumer Education Program.

[28] From April 2004 through January 2006, Knowledge Structures, Inc., assisted the Energy Commission in developing the request for proposals for the WREGIS System Development and Technical Operations Contractor.
[29] KEMA-XENERGY, under Energy Commission Contract #500-01-036, was technical support contractor for the Renewable Energy Program from June 2002 through June 2005. KEMA-XENERGY subsequently changed its name to KEMA.
[30] KEMA, under Energy Commission Contract #500-04-027, was technical support contractor for the Renewable Energy Program with a contract term of June 2005 through June 2008.
[31] Beginning May 2005 through April 2006, Enterprise Networking Solutions served as the senior project manager consultant to manage and coordinate the implementation phase of the WREGIS project.

New Renewable Facilities Program

Background

The New Renewable Facilities Program fostered the development of new in-state renewable electricity generation by providing financial support to new projects through two components: the New Renewable Resources Account and SEPs. The original program[32] provides production incentives to eligible renewable generating facilities that were first placed in operation between September 26, 1996, and July 1, 2002, in accordance with the guidelines from the initial program under SB 90. These incentives are paid in addition to what the facility is paid for its electricity. Under SB 1038, SB 1078, and SB 107[33], the program evolved to offer financial production incentives to cover above-market costs of meeting the RPS, subject to certain cost constraints (SEPs). If an eligible facility secured a power purchase agreement with a retail seller through a competitive solicitation, it could apply for SEPs.

In October 2007, the enactment of SB 1036, effective January 1, 2008, radically affected the New Renewable Facilities Program. In accordance with the legislation's direction, the Energy Commission implemented the following:

- The Energy Commission terminated all pending awards made to projects under the New Renewable Resources Account of the RRTF prior to January 1, 2002, unless the projects were on-line and operational by January 1, 2007.
- In March, the Energy Commission refunded the New Renewable Resource Account's remaining unencumbered funds (totaling $461,681,784) to the electrical corporations whose ratepayers contributed funds to support the RRTF. These electrical corporations included PG&E, SDG&E, SCE, and Bear Valley Electric Service.
- The Energy Commission's authority to award SEPs was eliminated as of January 1, 2008. Beginning 2008, the CPUC has authority over the disposition of above-market costs for meeting the RPS.

In addition, the enactment of SB 1036 removes the New Renewable Resources Account from the RRTF effective July 1, 2008.

New Renewable Resources Account

The New Renewable Resources Account originally awarded funding through competitive auctions in which facilities bid for the amount of incentive they wished to receive, up to 1.5 cents/kWh. Funding was awarded from lowest request to highest, capped by the total amount of funding available for each auction. The Energy Commission held three such auctions between March 1998 and June 2001 and conditionally awarded approximately $242 million to 81 facilities representing about 1,300 MW of capacity.

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[32] Original program under SB 90 is called the New Renewable Resources Account and is subsumed under the New Renewable Facilities Program.

[33] Program under SB 1038, SB 1078, and SB 107 is called the New Renewable Facilities Program.

To receive funding from the Energy Commission, these facilities were required to meet a series of milestones and begin selling power to the grid. Once on-line, the facilities were eligible to receive incentive payments for a maximum of five years. Of the 81 original awardees, 34 facilities were unable to meet their milestones for various reasons, including public opposition and the inability to secure a fuel supply or power purchase contract. Facilities that were not able to meet all of the milestones or meet the terms and conditions of the conditional funding award agreements had their awards canceled.

Table 7 summarizes the remaining 47 participating facilities by technology.

Table 7: New Renewable Resources Account Summary of On-Line Auction Winning Facilities

Technology	# of Projects	Capacity (MW)	Average Incentive (¢/kWh)	*Total Funds Committed*[1]
Biomass	2	11.30	1.30	*$2,485,743*
Geothermal	2	59.0	1.29	*$25,252,142*
Landfill Gas	15	39.57	1.11	*$13,746,596*
Small Hydro	3	31.25	1.05	*$3,499,069*
Wind	25	348.12	0.78	*$35,451,005*
Total	**47**[2]	**489.24**	**0.94**	***$80,434,555***

[1] The total funds committed for winning bidders in the second and third auctions reflect both the loss of potential bonuses for early on-line dates and 50% penalties for later on-line dates for those projects not yet on-line. The original conditional funding awards for winning bidders in the second and third auctions included potential bonuses for early on-line dates and did not reflect potential penalties for later on-line dates. The total funds committed also reflects a reduction of funds for projects that have completed their five-year collection of funds, did not fully collect the total funds originally allocated to them in their Conditional Funding Award, and had the uncollected funds disencumbered.

[2] The Wintec #2 wind project was split into two projects during fiscal year 2005-2006, but to maintain consistency with previous years, it will continue to be treated as one project for this section.

Source: California Energy Commission New Renewable Resources Account database.

Program Accomplishments and Status

A summary of payments made by technology through June 30, 2008, is shown in Table 8.

Table 8: Summary of Payments through June 30, 2008

Technology	Total Payments	Total Funds Committed And Paid	Percent of Committed Funds Paid
Biomass	$2,485,743	$2,485,743	100%
Geothermal	$25,252,142	$25,252,142	100%
Landfill Gas	$12,186,807	$13,847,945	88%
Small Hydro	$2,822,904	$3,387,688	83%
Wind	$31,514,471	$35,451,005	89%
Total	$74,262,066	**$80,424,523**	92%

Totals may not sum due to rounding.
Source: California Energy Commission New Renewable Resources Account database.

As mentioned, 47 New Renewable Resources Account auction-winning projects were able to meet the terms of their funding award agreements and collect incentive payments. Through June 30, 2008, these payments totaled about $74.3 million for 8,386 GWh of renewable generation. During the 2007-2008 fiscal year, 17 projects remained eligible to receive incentive payments. These payments totaled $4.7 million for 842 GWh of renewable generation. A list of payments and generation for all projects receiving funding during fiscal year 2007-2008 is detailed in the *2008 Annual Report Appendix, Appendix B*, on the Energy Commission's website at http://www.energy.ca.gov/renewables/quarterly_updates/index.html.

In November 2007, staff and the Energy Commission's Renewables Committee recommended the reallocation of $22.7 million of New Renewable Resources Account funds to the Emerging Renewables Program. These unused dollars consisted of SB 90 funds that were previously committed under the three New Renewable Resources Account's competitive auctions. The reallocation was approved at the Energy Commission's December 19, 2007 business meeting.

Decisions occurring in fiscal year 2007-2008 affected projects participating in the program. These included the following:

- Three projects funded by the New Renewable Resources Account reached the end of their five-year collection period, and the project accounts were closed. Their unused funds were disencumbered and subsequently included in the funds reallocated to the Emerging Renewables Program in December 2007.

CEC ID #	Funding Award Agreement #	Name
50023	REN-98-015	Wheelabrator
50024	REN-98-046	Cabazon Wind
50063	REN-01-063	Point Loma Wastewater Treatment

- The conditional funding award agreements for the following 10 projects were cancelled because the projects were unable to come on-line and meet the terms and conditions of their conditional funding award agreements (for example, failure to come on-line by July 2, 2003; failure to fulfill quarterly reporting requirements). The funds reserved for these projects were included in the December 2007 reallocation to the Emerging Renewables Program.

CEC ID #	Funding Award Agreement #	Name
50002	REN-98-004	Ox Mountain
50032	REN-98-007	Alta Mesa IV
50069	REN-01-069	EUI Project 2001
50072	REN-01-072	Tungstar
50075	REN-01-075	Alta Mesa VII
50076	REN-01-076	Golden Hills
50079	REN-01-079	Oak Creek 3
50080	REN-01-080	Deetricity
50081	REN-01-081	Oak Creek 4
50082	REN-01-082	Jawbone

- The funding award agreements for the following two projects were cancelled as directed by SB 1036 because the projects were awarded New Renewable Resources Account funds prior to January 1, 2002, but did not come on-line by January 1, 2007. The funds reserved for these projects were included in the funds returned to the electrical corporations.

CEC ID #	Funding Award Agreement #	Name
50022	REN-98-018	Telephone Flat
50026	REN-98-017	Fourmile Hill

- The following two projects funded by the New Renewable Resources Account were paid their full award amount, and the project accounts were closed:

CEC ID #	Funding Award Agreement #	Name
50005	REN-98-049	City of Sunnyvale
50025	REN-98-039	CalWind Resources

New Renewable Facilities Program

Supplemental Energy Payments

With the passage of SB 1038 and SB 1078 in 2002, the Energy Commission was directed to award production incentives (referred to as SEPs) from the New Renewable Facilities Program through competitive RPS solicitations conducted by IOUs rather than through the Energy Commission award processes. New renewable facilities that met specific eligibility requirements could receive SEPs that would be paid for each kWh of eligible electricity they generated.

Through October 2007, all SEPs applications filed at the Energy Commission either included confidentiality requests and/or were incomplete, failing to provide required data necessary for application evaluation. The Energy Commission notified applicants of deficiencies in their applications and/or confidentiality requests and were awaiting responses at the time SB 1036 became effective and ended the SEPs program. Beginning 2008, the CPUC assumed authority over the disposition of incentives for RPS above-market costs.

As previously mentioned, in addition to eliminating the SEPs program, SB 1036 also directed the Energy Commission to refund the New Renewable Resources Account's remaining unencumbered funds (totaling $461,681,784) to the electrical corporations who collected ratepayer dollars that fund the RRTF. Staff determined that funds available for transfer included $430,850,348 in funds collected from the utilities from 2002 through 2007 (intended for SEPs payments), plus $49,031,436 in funds collected from the utilities before 2002 that had become available due to the Energy Commission's cancellation of two project awards.[34] These awards were cancelled under Public Resources Code Section 25743 because the projects were awarded New Renewable Resources Account funds before January 1, 2002, but failed to come on-line by January 1, 2007. The refund to the utilities was completed in March 2008.

The total amount of New Renewable Resources Account funds refunded to the utilities did not include $18,200,000 that is still owed to the RRTF from the General Fund as a result of monies borrowed under the Budget Act of 2002 (Statutes of 2002, Chapter 379). Item 3360-011-0382 of Section 2.00 of the Budget Act of 2002 directed the State Controller to transfer $150,000,000 from the RRTF to the state's General Fund upon the order of the Director of Finance. The provisions of Item 3360-011-0382 specify as follows:

[34] The awards cancelled include Funding Award Agreement REN-98-017 to Calpine Siskiyou Geothermal Partners, L.P. ($20,792,000) and Funding Award Agreement REN-98-018 to CPN Telephone Flat, Inc. ($28,239,438).

> The transfer made by this item is a loan to the General Fund. This shall be repaid with interest calculated at the rate earned by the Pooled Money Investment Account at the time of the transfer. It is the intent of the Legislature that repayment be made so as to ensure that the programs supported by this fund are not adversely affected by the loans.

In June 2007, $131.8 million of the $150 million borrowed from the RRTF was repaid from the state's General Fund. However, the remaining $18.2 million is still owed and cannot be transferred to the utilities under Section 25743 until it has been repaid to the Energy Commission.

Emerging Renewables Program

Background

The Emerging Renewables Program provides incentives in the form of rebates to customers who install eligible renewable energy systems to offset part or all of their electricity needs at their homes or businesses. Along with expanding the sales of emerging renewable technology systems, the Emerging Renewables Program aims to encourage the siting of small, reliable distributed generating systems throughout California in locations where the produced electricity is both needed and consumed.

The Emerging Renewables Program was initially allocated $54 million for incentive payments from 1998 through 2001. In 2002, under SB 1038, more than $118 million was allocated for rebates from 2002 through 2006. Beginning in January 2005, AB 135[35] authorized the use of an additional $60 million of RRTF dollars to be collected from 2007 through 2011, subject to the repayment requirements of Public Resources Code Section 25751(f). SB 1250, passed in 2006, continued funding for program activities with the allocation of more than $281 million for 2007 through 2011. But SB 1250's 2008-2011 RRTF allocations were affected with the enactment of SB 1036 in October 2007 and effective January 1, 2008. SB 1036 abolished the RRTF's New Renewable Resources Account, thus reducing RRTF collections for 2008-2011 by 51.5 percent. The unencumbered balance in the New Renewable Resources Account was subsequently refunded in March 2008 to the electrical corporations serving customers subject to the renewable energy public goods charge. Consequently, the percentage of funding allocation to the Emerging Renewables Program was changed to 79 percent of the RRTF collections for the 2008-2011 period.

SB 1036's allocation changes are reflected in the estimated $282.2 million available for the Emerging Renewables Program and NSHP during the five-year period commencing January 1, 2007. This estimated funding is composed of the following:

[35] As codified in Public Resources Code Section 25744(c).

- Thirty seven and one-half percent (37.5 percent) of the funds deposited into the RRTF from January 1, 2007, through December 31, 2007, under SB 1250 or approximately $54,690,000.[36]
- Seventy nine percent (79 percent) of the funds deposited into the RRTF from January 1, 2008, through December 31, 2011, under SB 1036, approximately $227,520,000.

Over the years, several RRTF reallocations (see Chapter 5) have also served to supplement Emerging Renewables Program rebate dollars as demand increased. These included the Energy Commission's reallocation of $19 million in RRTF earned interest and 90 percent of SB 1038 funds available from the discontinued Customer Credit Program (totaling more than $60 million over five years).

During fiscal year 2007-2008, the Energy Commission approved reallocating $22.7 million from the New Renewable Resources Account to the Emerging Renewables Program to partially offset the $60 million loan authorized under AB 135 and to provide additional support for meeting the NSHP's sizeable goals. The reallocation consisted of available and unused SB 90 funds that were previously committed under the first, second, and third New Renewable Resources Account's competitive auctions.

Funds for the RRTF are transmitted to the Energy Commission quarterly. As experienced in the past, however, the demand for rebates can outpace the collection of funds. To respond to rebate requests and maintain momentum in the Emerging Renewables Program, the Energy Commission is authorized to borrow funds from other RRTF accounts against future quarterly collections for the Emerging Renewables Program as needed, provided the total program allocation is not exceeded. Rebate funds are available on a first-come, first-served basis until the total funding is exhausted. Any funds from cancelled or expired rebate reservations are made available to new participants. The rebate incentive levels, based on a system's generating capacity and measured in watts (alternating current), have varied over the duration of the program and have traditionally declined by 20 cents per watt (cents/watt) on July 1 and January 1 of each year.

The Emerging Renewables Program continues to focus on stimulating the market for distributed renewable energy until incentives are no longer needed to sustain the market for these technologies. Although price has been a major barrier to consumer adoption, rebates reduce the initial net purchase cost of the systems, thereby stimulating sales. Dramatic demand for solar photovoltaic systems has encouraged manufacturers to expand their production volume, which in turn improves the distribution network and increases the number of qualified installers. Because the market's expansion improves economies of scale, the Energy Commission anticipates lower system costs over the long term, particularly as technology advances.

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[36] This amount reflects the annual adjustment of funds collected from January 1, 2007, through December 31, 2007, at a rate equal to the lesser of the annual growth in electric commodity sales or inflation, as defined by the gross domestic product deflator.

The overall Emerging Renewables Program has changed over the years to become an umbrella program encompassing several discrete elements. The following sections discuss each of these element's accomplishments and status.

Emerging Renewables Program (1998-2006 and 2007-2011)

To be eligible to receive rebates from the Emerging Renewables Program, a number of basic criteria must be met. The generating system must be new, use an eligible technology type, and include other major system components (for example, inverters) approved by the Energy Commission. Qualifying systems must have a five-year warranty and must be less than 30 kW in size. [37] In addition, the generating system must be installed on a site that is interconnected to an eligible electric utility (IOUs only) and must offset part or all of the electricity demands of its installation site.

From 1998 through 2006, eligible technologies were solar photovoltaic, small wind, fuel cells using renewable fuels, and solar thermal electric. Effective 2007, only small wind systems (rated output of 50 kW or less) and fuel cells (using a renewable fuel) are eligible. Under SB 1 and the CSI, as of January 1, 2007, the majority of the rebates for solar photovoltaic systems are now being handled by IOUs under the direction of the CPUC. New residential construction, covered under the NSHP, is administered by the IOUs with Energy Commission oversight. To address these changes, in December 2006 the Energy Commission revised and adopted the *Emerging Renewables Program Guidebook (Eighth Edition)*, effectively removing eligible solar technologies.

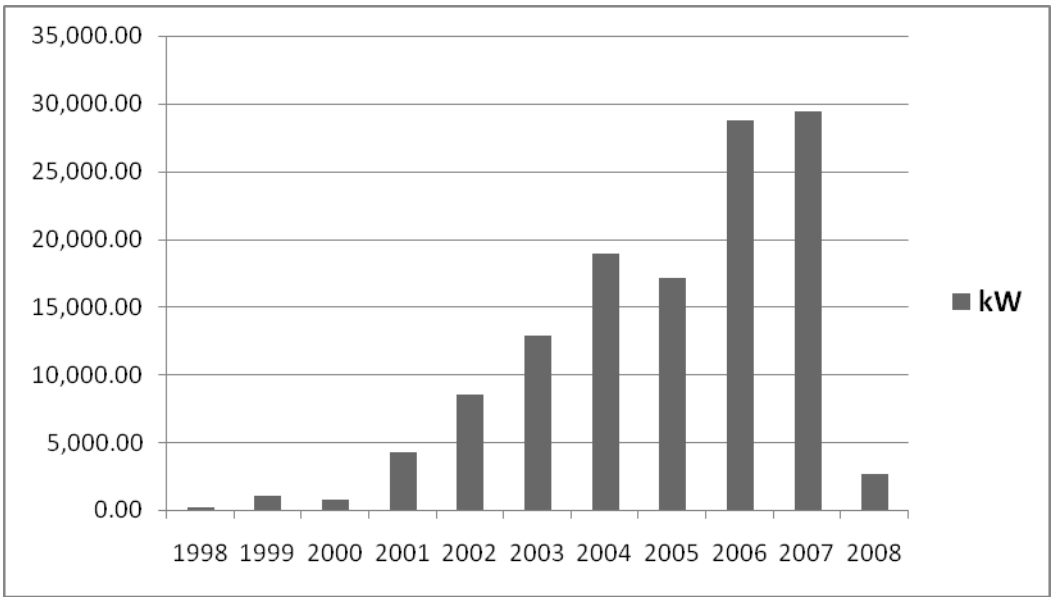
Program Activity

During fiscal year 2007-2008, the Energy Commission paid $28.1 million to 2,195 rebate applicants for completed projects located in IOU service areas. Completed projects represent 10.6 MW of generating capacity from photovoltaic and wind systems. Approximately 33 reservation requests for wind systems were received for 290.4 kW of wind capacity representing $591,557 encumbered funds. As of June 30, 2008, customers planning to install additional systems held approved rebate reservations totaling 3.9 MW of solar and wind capacity, encumbering about $10.6 million.

Since the Emerging Renewables Program's beginning in 1998 through June 2008, 27,884 emerging renewable systems have been installed with support from the program, representing 123.1 MW of distributed renewable electricity capacity, bringing total disbursements to about $402 million. Figure 1 shows payment and installation activities since the program's inception through June 30, 2008.

[37]Wind systems up to 50 kW in size may participate, but the rebates for such systems are limited because the rebate only applies to reducing the capital costs of 30 kW.

Figure 1: Completed and Paid Systems by Year
February 1998 Through June 2008



Source: California Energy Commission Emerging Renewables Program database.

Updated public information concerning the Emerging Renewables Program continues to be made available on the Energy Commission's website.

New Solar Homes Partnership

The Energy Commission's NSHP offers financial incentives to encourage high-performing solar installations on new, energy-efficient residential construction, including new affordable housing. NSHP is part of the comprehensive statewide solar program known as the California Solar Initiative.[38]

The partnership's goal is to encourage the installation of 400 MW of solar systems by the end of the program. The NSHP provides financial incentives as well as marketing support to home builders, thus encouraging the construction of new, energy efficient solar homes that save homeowners money on their electric bills and protect the environment. A related goal calls for

[38] At the direction of Governor Schwarzenegger, the California Solar Initiative (CSI) was created in 2006 through the efforts of the California Public Utilities Commission, the Energy Commission, and legislation in the form of Senate Bill 1. CSI is the largest solar program of its kind in the nation and provides more than $3.35 billion in investor-owned and publicly owned utility ratepayer funding from 2007-2016 to help California move toward a cleaner energy future and help bring the costs of solar electricity down for California consumers. The overall CSI program goal is to install 3,000 MW of solar generating capacity in the state by the end of 2016, with the NSHP contributing 400 MW toward the CSI goal. The CSI will be a major source of dependable and environmentally friendly electricity and is a major tool in the state's promise to address climate change and to meet the Governor's goals to reduce greenhouse gas emissions. Both the NSHP and the CPUC-administered CSI programs became operational January 1, 2007.

50 percent of the new homes annually constructed by the end of the 10-year program to have solar systems.

What is a Solar Home?

In California's NSHP, a solar home is a highly energy-efficient home that uses photovoltaic (or PV) modules to generate electricity from the sun. New residential housing that meets minimum Tier I efficiency of being at least 15 percent more efficient than current Title 24 building standards is eligible for incentives. The partnership encourages applicants to achieve Tier II efficiency levels that are 35 percent greater than Title 24 standards and 40 percent greater for the cooling budget. In addition, homes must have Energy Star appliances. Utility energy efficiency programs for new residential construction offer financial incentives to help achieve the higher efficiency requirements.

Program Administration

Because utilities are familiar with new residential developments and offer financial incentives for higher energy efficiency in new residential construction, the Energy Commission has had the objective that IOUs administer the program within their respective service areas, with oversight from the Energy Commission. The degree of administrative integration and synergies between the IOUs' programs (energy efficiency, interconnection services, and other new production home services) adds further value to justify the addition of discrete NSHP components to the utilities' other existing programs. In addition, the structure of the utilities' new construction energy efficiency programs streamlines the energy efficiency component of the application process and avoids significant duplication with the NSHP.

During 2007 and the first part of 2008, program administration was handled by the Energy Commission while contracts with the individual utilities were executed. In April 2008 program administration was turned over to the utilities, starting with SDG&E. SCE took over program administration for its service area in May 2008, followed by PG&E in June 2008. NSHP working group meetings are held monthly between Energy Commission staff and utility program administrators to handle and resolve program issues.

Affordable Housing

In 2006 the Commission encouraged the creation of an affordable housing advisory committee to help formulate guidelines and requirements for affordable housing applicants to participate in the NSHP. The advisory committee represents stakeholders from the affordable housing industry, including builders, affordable housing advocates, and governmental agencies involved with affordable housing. As a result of the collaboration, in July 2007 the Energy Commission approved proposed revisions to the Guidebook dealing primarily with affordable housing.

Program Activity

As of June 30, 2008, a total of 250 applications, representing 3,640 residential solar systems, were in various stages of applying to the program. Of those, 100 applications, representing 1,288 residential systems, were listed as "Pending." (Pending applications are defined as applications in the initial stages of applying to the program and additional information is required before

formally submitting the complete application package.) The other 150 applications submitted to the program represent 2,352 residential systems. Of the 150 applications, 130 were listed as approved, reflecting 2,041 residential systems; 5 applications, representing 260 systems, had been submitted and were under review; and 15 applications representing 51 systems had been paid. During the period July 1, 2007- June 30, 2008, total payments of $667,778 were made for the 51 completed systems. Tables 9, 10, and 11 summarize NSHP activity.

Table 9: New Solar Homes Partnership Activity as of June 30, 2008
Number of Applications/Residential Systems[1]

Application Type	Pending	SUBMITTED				TOTAL
		Under Review	Approved	Completed Systems	Total	
Large Development (6+ homes)	13/980	4/259	29/1,931	*/36	33/2,226	46/3,206
Small Development (<6 homes)	11/72	0/0	5/13	0	5/13	16/85
Affordable Housing	12/172	0/0	9/10	1/1	10/11	22/183
Custom Home	64/64	1/1	87/87	14/14	102/102	166/166
Total	100/1,288	5/260	130/2,041	15/51	150/2,352	250/3,640

[1]Numbers referenced as, for example, 13/980, mean 13 applications representing 980 individual homes with solar systems.
"*" denotes that not all of the residential solar systems associated with an application have been completed.
Source: California Energy Commission New Solar Homes Partnership database.

Table 10: New Solar Homes Partnership Activity as of June 30, 2008 MW Capacity*

Application Type	Under Review/ Approved	Completed	Total
Large Development (6+ homes)	4.59	0.07	4.66
Small Development (<6 homes)	0.03	0	0.03
Affordable Housing	0.11	0.08	0.19
Custom Home	0.57	0.07	0.66
Total	5.30	0.22	5.54

*Capacity of pending projects is not included because of fragmentary information.
Source: California Energy Commission New Solar Homes Partnership database.

Table 11: New Solar Homes Partnership Activity as of June 30, 2008

Housing Type	Completed (Paid $ thousands)
Large Development (6+ homes)	$189.0
Small Development (<6 homes)	0
Affordable Housing	$303.8
Custom Home	$174.9
Total	$667.8

Source: California Energy Commission New Solar Homes Partnership database.

During 2007-2008 the website [www.gosolarcalifornia.org] was significantly improved, providing more information about both the NSHP and the CPUC's CSI programs. The website assists eligible consumers in understanding the incentive application process and provides a user-friendly calculator for computing the expected incentive amount based on data entered by the customer or applicant. Further, the website offers a wealth of information and posts announcements and events that relate to solar energy. To make it easier for interested applicants to find information, the website is arranged by application type: new homes, existing homes, non-residential buildings, low-income and affordable housing, and municipal utility customers. Although content is provided by staff from the CPUC and the Energy Commission, the website is currently being maintained by the Energy Commission. Website content is posted

as new information becomes available and is updated regularly. A builder's kit is now available for builders to help guide them through the application process and to provide them with information on how to team with the Energy Commission to market their solar homes.

An NSHP Web-application tool has been developed by the Energy Commission for record retention purposes and to streamline the application process. Utilities and program participants are using this on-line tool.

Activity during the first half of 2008 has increased significantly. Applications representing upwards of 2,000 housing units were received during the March 2007–June 2008 period. As a result the Commission anticipates that a decline in incentives, specified by the NSHP Guidebook, will be instituted, probably during the second half of 2008. Consistent with the NSHP Guidebook, a 30-day notice will be sent to alert prospective program applicants about the anticipated decline. The amount of the decline will be 10 percent for market-rate housing incentives. Affordable housing incentives will not be affected by the market-rate incentive decline when it occurs because affordable housing has its own incentive and volumetric decline schedule.

Solar Schools Program

In May 2004, the Energy Commission adopted specific funding and eligibility requirements for the Solar Schools Program element of the Emerging Renewables Program. The $4.5 million in incentives for the program element, funded equally by the Energy Commission's Emerging Renewables Program ($2.25 million) and the California Attorney General's Alternative Energy Retrofit Account (AGAERA, $2.25 million), provides rebates for the installation of solar photovoltaic systems for public and charter schools that meet certain eligibility requirements. Funding was executed via an interagency agreement between the Energy Commission and the Consumer Power and Conservation Financing Authority and in June 2006, the Energy Commission approved an 18-month, no-cost time extension. The special funding for the Solar Schools Program expired on June 30, 2008.

Program Activity

For fiscal year 2007-2008, the program paid $379,038 in Emerging Renewable Program RRTF dollars and match funds of $379,038 AGAERA dollars for a total of $758,077 to five schools. These support dollars funded photovoltaic system installations representing 141.6 kW of renewable electricity capacity.

As of June 30, 2008, cumulative Solar Schools Program payments of $3.9 million (from both funds) have been paid for a total of 28 installed photovoltaic systems representing 642.5 kW of renewable electricity capacity.

Existing Renewable Facilities Program

Background

The Existing Renewable Facilities Program was originally allocated $243 million for the four-year period of 1998 to 2001 to fund renewable energy facilities in California. Eligible facilities were required to have begun operating before September 26, 1996. With the passage of SB 1038 in 2002, the Energy Commission modified the program to reflect statutory changes in regard to eligibility, funding levels, target prices, and funding caps. In addition, the 2002 through 2006 funding for the Existing Renewable Facilities Program was reduced from 45 percent ($243 million) of the RRTF collections to just 20 percent (about $135 million).

The current program sets a target price for which a facility may receive RRTF funding if the contract price falls below the target price in a given month. Funding is capped, however, at a cent/kWh level such that even if the price falls below the target price by a factor greater than the cap amount, the incentive payment will not exceed the cap. If the contract is equal to or higher than the target price, then no incentive payments are made from the RRTF. For illustration, if a target price is set for 6 cents/kWh and the cap is 1 cent/kWh, then the facility will receive a production incentive if the contract price falls below 6 cents/kWh. To continue the example, if the price drops to 5 cents/kWh in April and 4.5 cents/kWh in May, then the facility would receive 1 cent/kWh in both April and May (in May, the incentive payment is limited by the cap).

The process for determining target prices and caps for each facility for the calendar years 2007 through 2011 was modified by SB 1250. This bill also reduced the overall funding allocation to the Existing Renewable Facilities Program. These changes are reflected in revised program guidelines that were adopted by the Energy Commission in 2007. Specifically, SB 1250 decreased the funding for the Existing Renewable Facilities Program from 20 percent (about $135 million) of funds collected for the 2002 through 2006 period, to 10 percent (about $75 million) for the 2007 through 2011 time period. However, SB 1036, effective January 1, 2008, revised the Existing Renewable Facilities Program's 2008 through 2011 share of RRTF funding from 10 percent to 20 percent.

It should be noted that SB 1036 also reduced the amount of total RRTF collections by 51.5 percent by eliminating the Energy Commission's authority to award SEPs and required that unencumbered New Renewable Resources Account funds be remitted to the IOUs. Consequently, the 2008 through 2011 Existing Renewable Facilities Program funding allocation is now 20 percent of $288 million (about $57.6 million).

The Existing Renewable Facilities Program funds are providing electricity production incentives for existing solid-fuel biomass facilities and solar thermal electric facilities. Existing wind facilities are technically eligible for Existing Renewable Facilities Program funding but, due to market conditions, are not receiving production incentives at this time.

Initially, program funding was divided into three tiers intended to reflect the degrees of competitiveness of the various renewable energy technologies. Tier 1 included solid-fuel biomass and solar thermal facilities, and Tier 2 consisted of wind facilities. Tier 3 technologies

included geothermal, small hydro, digester gas, landfill gas, and municipal solid waste. The technologies originally included in Tier 3, along with one technology formerly in Tier 1 (waste tire), have not been eligible for funding from the Existing Renewable Facilities Program since January 1, 2002. The program was initially designed to reduce the amount of funds available in each tier annually as renewable generation facilities were expected to become more cost-effective and require less financial help to compete in an unregulated market. With the passage of SB 1038, however, funding allocations remained constant, and the program was divided into Tiers 1 and 2, with Tier 1 receiving the larger proportion of funding.

Table 12 lists the initial funding allocations by tier.

Table 12: Original Funding Allocations ($ millions) by Year[1]

	1998	1999	2000	2001	2002 – 2006 Annual Allocation	2007	2008	2009	2010	2011	Overall
Tier 1[2]	$43.20	$36.45	$31.05	$24.30	$20.25	$15.00	$14.40	$14.40	$14.40	$14.40	$308.85
Tier 2	$21.60	$18.90	$16.20	$13.50	$6.75	N/A	N/A	N/A	N/A	N/A	$103.95
Tier 3[4]	$12.15	$10.80	$8.10	$6.75	N/A	N/A	N/A	N/A	N/A	N/A	$37.80
All	**$76.95**	**$66.15**	**$55.35**	**$44.55**	**$27.00**	**$15.00**	**$14.40**	**$14.40**	**$14.40**	**$14.40**	**$450.6**

[1] Collection of funds from 2002 - 2011 is adjusted annually; consequently, the amounts available for those years for Tiers 1 and 2 are estimates.
[2] Waste tire is not eligible for funding from 2002 – 2011.
[3] Although existing wind facilities are technically eligible for funding from 2007 – 2011, they currently do not require assistance and therefore have not been allocated any funds.
[4] Tier 3 technologies are not eligible for funding from 2002 – 2011.
Source: California Energy Commission Existing Renewable Facilities Program database.

Table 13 shows target prices and caps for the Existing Renewable Facilities Program from 1998 through 2006.

Table 13: Target Prices and Caps (cents/kWh) from 1998 through 2006[4]

		1998	1999	2000	2001	2002	2003	2004	2005	2006
Tier 1	Target Price	5.0	4.5	4.0/5.0[1]	5.0[1]	5.5	5.37	5.37	5.37[2]	5.37[2]
	Cap	*1.5*	*1.5*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*[3]	*1.0*[3]
Tier 2	Target Price	3.5	3.5	3.5	3.5	3.8	3.8	3.8	3.8	3.8
	Cap	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*	*1.0*
Tier 3	Target Price	3.0	3.0	3.0	3.0	N/A	N/A	N/A	N/A	N/A
	Cap	*1.0*	*1.0*	*1.0*	*1.0*	N/A	N/A	N/A	N/A	N/A

[1] In October 2000, the Energy Commission approved an increase in the target price for Tier 1 facilities from 4.0 to 5.0 cents/kWh, starting with November 2000 generation. This change was made to ensure that biomass facilities stayed on-line through at least the end of 2001 and encourage several other facilities that were off-line at the time to restart before summer 2001.
[2] The target price for Tier 1 biomass **ONLY** was 6.17 cents/kWh for November 1, 2005, through April 30, 2006, generation, and 5.87 cents/kWh for May 1, 2006, through December 31, 2006, generation.
[3] The cap for Tier 1 biomass **ONLY** was 1.5 cents/kWh for November 1, 2005, through December 31, 2006, generation.
[4] Target prices and incentive caps for 2007 were no longer allocated by tier. The Energy Commission evaluated a facility on an individual basis rather than to assign target prices and production incentive caps collectively for facilities based on technology. The Energy Commission is in the process of revising the Guidebook for the 2008-2011 period. At its June 12, 2008, workshop, staff proposed a list of options for administering the Existing Renewable Facilities Program. Some of those options propose to bring back a tiered-structure for the program.
Source: California Energy Commission Existing Renewable Facilities Program database.

2007 Calendar Year Funding Award Process

Beginning in 2007, SB 1250's revised program structure required individual facilities to apply for funding. To be eligible for Existing Renewable Facilities Program funds, a facility must be physically located within California and be certified with the Energy Commission as eligible for California's RPS. Funding applicants are required by law to provide the following information to the Energy Commission:

- The cumulative amount of funds the facility has previously received from the Energy Commission and other state sources.
- The value of any past and current federal or state tax credits.
- The facility's contract price for energy and capacity.
- The market value of the facility.

- An estimate of the incentive payment needed (in cents/kWh) above the energy payments the facility will receive during the calendar year the applicant is applying for; also an explanation of why this incentive level is needed.
- An explanation of how the incentive payments from the Existing Renewable Facilities Program will allow the facility to become cost-competitive by the end of 2011.

To implement these provisions enacted by SB 1250, the Energy Commission staff proposed changes to the program guidelines. In January 2007, the Renewables Committee held a workshop to receive comments from interested parties on the development of the *Existing Renewable Facilities Program Guidebook, Fourth Edition (Guidebook).*[39] In March 2007, the Energy Commission adopted the revised *Guidebook*.

The revised guidelines laid out the following process for funding. First, parties interested in receiving funding from the Existing Renewable Facilities Program must submit an application to the Energy Commission that includes the information required by law as identified above. Based on the information submitted to the Energy Commission, the applicant's request for funding is either rejected or a Funding Award Notice is issued specifying the target price and production incentive cap for that facility.

Thirty days after the adoption of the *Guidebook*, facilities interested in receiving funding under the program applied for 2007 awards by submitting an "Application for Funding Eligibility-Existing Renewable Facilities Program" (Form CEC-1250E-1). After staff's review of the applications, the Energy Commission's Renewables Committee was briefed on staff's recommendations for Funding Award Notices. Proposed Funding Award Notices for calendar year 2007 were finalized and sent to program applicants beginning in August 2007, and were subsequently approved by the Energy Commission at a business meeting.[40]

After approval of a Funding Award Notice by the Energy Commission at a regularly scheduled business meeting, and after the agreement is signed, the facility representative may submit monthly invoices to the Energy Commission. The awardees are paid a cents/kWh incentive for their eligible renewable generation with payments based on the lowest of three possible calculations:

1. The difference between the facility-specific "target price" as determined by the Energy Commission and the facility's market price,
2. The facility-specific cents/kWh production incentive cap, or

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[39] California Energy Commission, March 2007, *Existing Renewable Facilities Program Guidebook, Fourth Edition*, CEC-300-2007-005-CMF, www.energy.ca.gov/2007publications/CEC-300-2007-005/CEC-300-2007-005-CMF.PDF.

[40] However, the Funding Award Notices for Dinuba Energy, Madera Power, and Sierra Power Corp. were not submitted to an Energy Commission business meeting for approval in August 2007 because these facilities informed Energy Commission staff that any further delay in providing funding would cause the facility to shut down. The aforementioned facilities did not shut down in the 2007 calendar year.

3. Available funds divided by total generation (modified to account for differences in market prices).

The payments based on Funding Awards for calendar year 2007 were all made during the 2007-2008 fiscal year. However, the funds were distributed on a later schedule than had been the program experience to date. For example, for facilities that had funding awards approved near the end of 2007, they received their payments as a lump sum payment for several months' worth of generation rather monthly payments.

Similar to 2007, payments for energy produced in calendar year 2008 may not be issued until the 2008/2009 fiscal year. Consequently, this report only includes information on facilities that were eligible for funding as of December 31, 2007. Target prices, production incentive caps, and dollars paid to each of the participating facilities are listed in the *2008 Annual Report, Appendix E.*

Notable funding award activities during fiscal year 2007–2008 included a restarted biomass facility, Big Valley Power, which received a funding award of $360,000. This award helped offset the cost of capital improvements. Based on this award, Big Valley Power stated it will be able to operate in future years without funding from the Existing Renewable Facilities Program. Additionally, three facilities that received funding in previous years, Sierra Pacific-Burney, Sierra Pacific-Lincoln, and Sierra Pacific-Quincy, declined to submit complete applications for funding in 2007 and subsequently operated without funding for generation in 2007.

Preliminary Lessons Learned with Implementation of SB 1250

The enactment of SB 1250 set in motion a process to recraft the Existing Renewable Facilities Program that continues today. Before SB 1250, the implementation of the Existing Renewable Facilities Program allowed for fairly formulaic payments to facilities that met specific criteria described in the program guidelines. Beginning in 2007, SB 1250 required facility-specific applications for funding. The effort to redesign the program to implement SB 1250 required a greater investment in Energy Commission resources than was needed in previous years. The process benefited from considerable public input as well.

The redesign of the Existing Renewable Facilities Program resulted in delays in the distribution of funds. The Energy Commission's evaluation on a project-specific basis was more resource-intensive to administer than the prior program structure and required lengthy reviews of funding applications. Also, Public Resources Code Section 25742 requires the Energy Commission to "…determine the value of an award to the public relative to other renewable energy investment alternatives. The commission shall compile its findings and report them to the Legislature in the reports prepared pursuant to Section 25748." Staff implemented this by recognizing that each facility potentially has different funding needs, and that facility-specific needs should be considered when reviewing funding applications for each facility. For example, representative from both biomass and solar thermal electric facilities submitted applications requesting funding for a variety of capital improvements needed, and those improvements differed greatly in sizes and scope. Making an apples-to-apples comparison of funding needs for capital improvements proved to be challenging.

Another cause for delay in the process was that several program participants requested confidential designation from the Energy Commission for information included in their funding applications. Although the Energy Commission makes every effort to promptly make a determination on a request for confidentiality, this nonetheless adds at least 30 days to the process of making a funding decision.

Finally, with a few exceptions noted above, funding decisions per facility were individually taken to the full Commission for consideration and adoption. Before the implementation of SB 1250, the Energy Commission's adopted *Guidebook* put forward the funding eligibility criteria such that payments could be distributed without the need to consider a separate award at a business meeting for each facility seeking funding.

Proposed Guidebook Changes for 2008-2011 Funding Awards

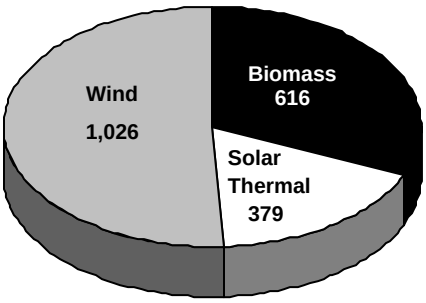
To clarify and improve program transparency and expedite the distribution of funds, staff proposed revisions to the *Existing Renewable Facilities Program Guidebook, Fourth Edition*. On December 13, 2007, the Renewables Committee held a workshop to take comments on proposed changes to the *Guidebook*. Additionally, staff held a workshop on June 12, 2008, to discuss various options to streamline the program's application requirements while ensuring that the revised program would be consistent with statutory requirements.

Based on consideration of stakeholder comments and direction from the Renewables Committee, staff plans to submit a revised *Guidebook* for approval at an Energy Commission Business Meeting in September 2008. Once the revised *Guidebook* is approved by the Energy Commission, staff will begin disbursing program funds to eligible facilities for generation in calendar year 2008.

Program Accomplishments and Status

For the period from July 1 through December 31, 2007, 103 Existing Renewable Facilities Program facilities were eligible for funding, representing more than 2,021 MW of capacity. Figure 2 illustrates the breakdown of all eligible capacity by technology for calendar year 2007.

Figure 2:
Existing Renewable Facilities Program Capacity (MW)



Source: California Energy Commission Existing Renewable Facilities Program database

The Energy Commission distributed the first payments from the Existing Renewable Facilities Program in March 1998. From the beginning of the program through June 30, 2008, the Energy Commission has paid more than $267 million for more than 73,434 GWh of generation from the Existing Renewable Facilities Program. Payments for fiscal year 2007-2008 totaled $18.1 million on 3,319 GWh of generation. Table 14 summarizes payment information by technology since the beginning of the program. Of special note is the fact that Tier 2 facilities (wind) have been competitive during the past five

fiscal years, so they have not required incentives from the Existing Renewable Facilities Program.

Table 14: Existing Renewable Facilities Program Payments January 1, 1998, to June 30, 2008

Technology	Generation (kWh)	Payments
Biomass	25,961,800,667	$167,291,335
Digester gas	46,951,481	$17,712
Geothermal	21,517,571,711	$16,393,710
Landfill gas	2,906,936,989	$2,779,033
Small hydro	2,061,599,882	$4,540,603
Solar thermal	6,817,862,669	$35,491,799
Waste tire	286,844,813	$4,207,418
Wind	13,647,877,823	$36,421,502
Total	**73,434,446,035**	**$267,143,112**

Source: California Energy Commission Existing Renewable Facilities Program database.

The *2008 Annual Report Appendix, Appendix E*, located on the Energy Commission's website at www.energy.ca.gov/renewables/quarterly_updates/index.html, provides a project-by-project breakdown of payment and generation for the 2007-2008 fiscal year.

Fuel Use by Biomass Facilities

As part of the reporting requirements for the Renewable Energy Program's *Annual Report to the Legislature*, the Energy Commission must describe the types and quantities of biomass fuels used by each existing facility seeking an award and their impacts on improving air quality. *Appendix E* includes the percentages of the following types of biomass fuel used by each biomass facility: agricultural crops, waste, and residue; solid waste materials; and wood/wood waste from state forests. Biomass facilities report this information to the Energy Commission on the form titled "Biomass and Fossil Fuel Usage Report for Biomass Facilities" (CEC-1250E-4). The *2008 Annual Report to the Legislature* reports on biomass fuel use for the 2007 calendar year. In future *Annual Reports*, this information will be reported on a fiscal year basis.

The environmental benefits of biomass projects, including potential reductions in greenhouse gasses, are summarized in the California Environmental Protection Agency's March 2006 report *Climate Action Team Report to Governor Schwarzenegger and the Legislature*.[41] This report states, "Large, episodic, unnaturally hot fires are an increasing trend on California's wild lands because of decades of fire suppression activities, sustained drought, and increasing insect, disease, and invasive plant infestations. Actions taken to reduce wildfire severity through fuel reduction and biomass development would reduce climate change emissions from wildfire, increase carbon sequestration, replace fossil fuels, and provide significant local economic development activities." The report continues, "Such (fire management and biomass development) projects would: 1) reduce the intensity of wildfires and their associated climate change emissions, 2) increase the carbon stock of the remaining trees, 3) remove pests that create mortality of live stored carbon and reduce large damaging wildfires, 4) reduce state and local fire suppression costs, 5) provide a source of renewable alternative fuel, and 6) provide significant rural economic development opportunities." These precise benefits are being achieved through the Existing Renewable Facilities Program as the biomass facilities that are eligible under the program use a significant amount of timber and brush culled from state forests as a part of brush clearing and fire suppression efforts.

Consumer Education Program

Background

Under SB 1038, the Consumer Education Program was allocated 1 percent of the RRTF, or approximately $1.35 million per year, to support consumer education on renewable energy. In April 2003, after discontinuation of the Customer Credit Program, the Energy Commission approved reallocating 10 percent of Customer Credit Program funds, or $1.35 million annually, to the Consumer Education Program. These reallocated dollars were earmarked for funding RPS tracking and verification activities. In 2006, SB 1250 was enacted, requiring 1 percent of the RRTF to be used to help develop a consumer market for renewable energy and small-scale emerging renewable energy technologies for the period January 1, 2007, to January 1, 2012.[42] However, SB 1036, effective January 1, 2008, abolished the RRTF's New Renewable Resources Account, thus reducing fund collections for 2008-2011 by 51.5 percent. The percentage of SB 1036 funding allocation to the Consumer Education Program remained unchanged at 1 percent of the RRTF collections for the 2008-2011 period.

An estimated $4,338,000 is available for the Consumer Education Program element during the five-year period commencing January 1, 2007. This estimated funding is composed of the following:

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[41] California Environmental Protection Agency, March 2006, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, www.climatechange.ca.gov/climate action team/reports/2006report/2006-04-03 FINAL CAT REPORT.PDF.

[42] California Energy Commission, March 2007, *Consumer Education Program Guidebook*, CEC-300-2007-004-CMF, www.energy.ca.gov/2007publications/CEC-300-2007-004/CEC-300-2007-004-CMF.PDF.

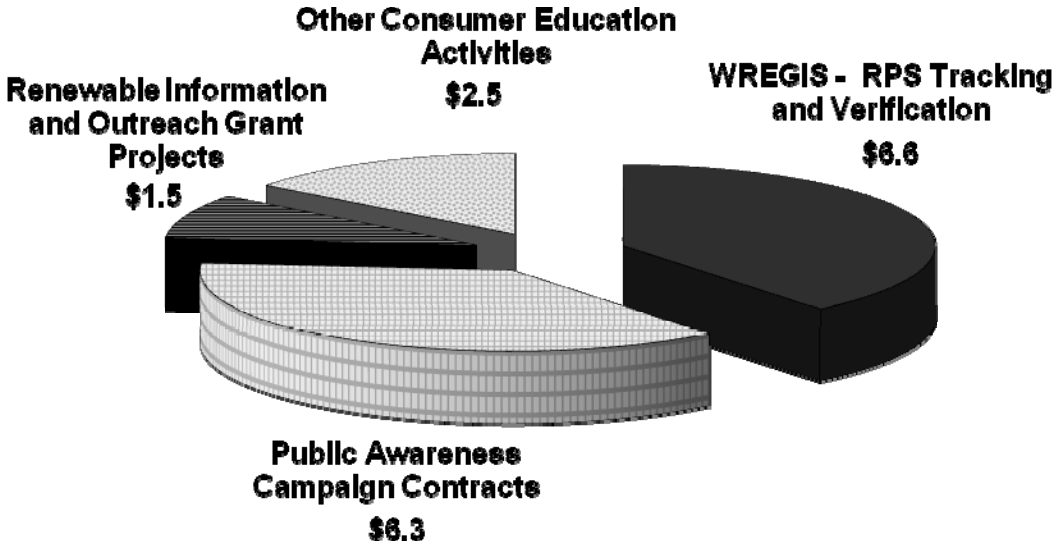
- One percent of the funds deposited into the RRTF from January 1, 2007, through December 31, 2007, under SB 1250 (approximately $1,458,000).
- One percent of the funds deposited into the RRTF from January 1, 2008, through December 31, 2011, under SB 1036 (approximately $2,880,000).

The four primary goals of the Consumer Education Program are to:

1. Raise consumer awareness of renewable electricity generation and its benefits.
2. Increase the purchases of small-scale emerging renewable systems installed on customer premises.
3. Leverage strategic alliances and partnerships with organizations connected to renewable energy in California.
4. Develop information, products, and processes that promote the renewable energy market in general, including those that add consumer value to renewable energy by verifying and tracking energy generation and verifying retail product claims.

Since 1999, the Consumer Education Program has expended or encumbered approximately $17 million to support 3 public awareness campaigns funded through contracts; 21 grant projects awarded for renewable energy information and outreach activities; the development of an electronic tracking system, WREGIS, to address long-term RPS tracking needs; and other consumer education activities promoting renewable energy. Figure 3 shows how Consumer Education Program funds have been allocated among activities.

Figure 3: Consumer Education Program Expenditures and Encumbrances ($ million) as of June 30, 2008



Source: California Energy Commission Consumer Education Program database.

Fiscal year 2007-2008 consumer education accomplishments are discussed below. Additional details of WREGIS activities are included in Chapter 2.

Program Accomplishments and Status

WREGIS – RPS Tracking and Verification

- A KEMA technical support contract work authorization totaling $127,508 to assist with WREGIS development and implementation.

  Expended $9,982

- Visionary Integration Professionals $198,000 contract for the services of a program development project manager consultant for the WREGIS project. $40,000 added from ERPA funds in April 2007.

  Expended $6,585 from Consumer Education; $40,000 from Energy Resources Program Account

- WECC $2.203 million contract for hosting the WREGIS administrator staff and administering the WREGIS program.

  Expended $735,223

- APX, Inc., $3.278 million contract to function as a system development and technical operations contractor. The contractor conducted technical operations and maintenance of the WREGIS software and incorporated changes to the system authorized by the Energy Commission.

  Expended $1,204,800

- Public Sector Consultants $55,100 contract to act as the independent project oversight consultant for the WREGIS project.

  Expended $13,050

- Personal Enterprise, Inc., $115,200 contract to perform quality assurance and configuration management consultant activities for the WREGIS project. $40,000 added from ERPA funds in April 2007.

  Expended $25,840 from Consumer Education; $39,360 from Energy Resources Program Account

Edelman Public Awareness Campaign Contract for New Solar Homes Partnership

- Edelman's three-year contract for $4.3 million provides an array of marketing and communication services that support the NSHP in developing and implementing a statewide public awareness campaign to encourage the purchase of new solar homes and to help establish a self-sustaining solar homes market. Edelman is tasked with the following:
  - Developing and presenting an approach for identifying California consumers most likely to purchase new solar homes.

- Developing a public awareness and marketing campaign, with related messages and strategies, to reach those consumers.
- Working with the Energy Commission to implement the campaign while coordinating activities among various public and private stakeholders.

Edelman will also design and implement a method to measure the effectiveness of the campaign to ensure it meets the Energy Commission's objectives and results in increased purchases of new solar homes.

- In March 2008, Edelman submitted the *New Construction Home Buyers Market Research Summary Report*, which provided the results from focus groups and market surveys conducted in 2007. The *Summary Report* was released to builders, photovoltaic retailers and installers, targeted new home buyers, the building industry, trade associations, and consumer media. Additionally, Edelman provided direction on early NSHP campaign activities through its *2007 Marketing and Media Plan*. The comprehensive NSHP *Marketing and Media Plan* is designed as a multifaceted approach to educate builders and consumers about solar energy and to increase solar capacity in California. To encourage builder participation in the NSHP, the Builder Outreach Kit was developed with assistance from ProProse (another contractor tasked with supporting the NSHP public awareness campaign through partnership development).

  The marketing resources noted above can be accessed on the Energy Commission's website at www.gosolarcalifornia.ca.gov/builders/marketing_resources/index.html.

- Campaign activity conducted by Edelman included working with ProProse to design a strategy to launch both the consumer and builder advertising in a creative strategy document. To execute this strategy, some of the marketing elements included the following:
  - Creating the Sun Certified Energy Efficient Home seal to represent NSHP homes.

  - Launching radio consumer advertising messages.
  - Placing advertisements in builder magazines.
  - Creating news releases targeting both the consumer and builder.

- Coordinating key speaking opportunities and media outreach for the Energy Commission's Chairman.
- Preparing presentations for the American Solar Energy Society's Solar 2008 Conference in San Diego.

Other campaign activities included:

- Attending an introductory meeting among the IOUs, Energy Commission staff, and ProProse.
- Hosting a workshop on incorporating solar into NSHP multifamily developments at the 2008 Annual Housing California Conference (on affordable housing).
- Coordinating and launching the NSHP marketing working group that is responsible for gathering statewide affordable housing expertise and leveraging resources.
- Participating in biweekly team update meetings.
- Updating the NSHP master database, which outlines potential NSHP partners.

Some of the above deliverables and work products share the goals and target audiences common to SB 1. With the passage of SB 1 on August 21, 2006, and the launch of the NSHP on January 1, 2007, the opportunity to synergize their marketing activities and work products is important in meeting the Energy Commission's marketing and outreach mandates set forth in SB 1. These include educating builders to incorporate solar energy systems during construction as well as providing technical and educational assistance to builders and contractors.

Encumbered $1.5 million for year two of the contract; Expended $592,555

ProProse Public Awareness Campaign Contract for New Solar Homes Partnership

- ProProse provides support to the NSHP Public Awareness Campaign through a California Multiple Award Schedule agreement for partnership development and assists with the initial stages of developing an effective campaign that will meet the program's goals. The original two-year agreement was for $105,000. The Energy Commission formally amended the contract, extending the term another 14 months (through December 2009), and increased funding by $145,000, for a combined total of $250,000. Partnerships are a vital component of the NSHP and enable the state to increase the reach of the messages being delivered by the campaign. The amendment allows ProProse to maximize efforts for partnership development with builders, utilities, solar retailers, and the real estate industry to educate and leverage the other assets of the NSHP.
- ProProse provided input and collaborated with Edelman on the 2007 and 2008 Marketing and Media plans and the Builder Outreach Kit, as well as the www.gosolarcalifornia.org website (the state's portal to the NSHP, CSI, and programs administered by municipal utilities).

- The contractor met with various organizations and stakeholder groups including the NSHP Advisory Committee, trade allies, marketing partners, financial institutions, retailers, and municipalities to pursue partnership opportunities.
- ProProse successfully negotiated an additional $1.3 million in bonus media from Clear Channel Communications, a global media and entertainment company specializing in radio broadcasting and outdoor displays, inclusive of value-added (bonus-free advertising) for the administration of a two-year, statewide solar sweepstakes.
- The contractor pursued additional sponsorship and marketing support opportunities with financial institutions for the NSHP public awareness campaign.

Fiscal year 2007-2008 expenditures were for partnership development and initial campaign development activities.[43]

Encumbered $145,000 (new total of $250,000); Expended $56,878

KEMA Technical Support Contract

The KEMA technical support contract (#500-04-027) was amended to provide a one-year, no-cost time extension that continues the agreement through June 30, 2009.

- A payment for release of retention was made during this period for preliminary work done to assess the solar market. This work authorization was authorized to evaluate the current solar market and develop a report on best options for creating sustainability. Early on in the project, the work was suspended and subsequently terminated, due to the anticipated contracts for the NSHP public awareness campaign and partnership development.

  Expended $677 for retention
- New Solar Homes Partnership – In support of the NSHP, including affordable housing, two work authorizations (totaling $211,140) provided assistance to staff and manufacturers in resolving temperature issues that were affecting the solar photovoltaic equipment and calculations on the Energy Commission's photovoltaic calculator; technical advice on affordable housing and solar equipment; evaluation of the impact that amendments to current IRS regulations would have on the NSHP; and participation in NSHP committee meetings.

  Expended $21,620, including payment for retention in the amount of $14,245
- Utility Allowance Tool – Two work authorizations (totaling $51,012) tasked the contractor with developing a quantitative model that considers the utility rate offsets due to solar electric systems and the added energy efficiency measures. The tool would be available to the California affordable housing community to better estimate utility expenses for affordable housing developments. The model takes input from various energy calculation software tools to determine a site-specific estimate of tenant utility

[43] Awaiting official approval to amend and extend the contract, further partnership development activities were put on hold in January 2008, and once the extension was approved, resumed in May 2008.

bills. The project was divided into phases due to a longer stakeholder review process than originally anticipated. Additional model features were created.

Expended: $45,911

Other Consumer Education Activities

- The Clean Energy States Alliance (CESA) contract, approved in August 2006, is a three-year $240,000 ($80,000 per year) membership agreement. CESA is an unprecedented multistate collaboration of clean energy funds that have banded together and pooled resources to expand the use of clean energy across the country by supporting solar, wind, fuel cells, and other clean energy projects and companies. At present, there are 16 member states with CESA attracting the interest of a number of other state clean energy programs. CESA is the only organization that represents the collective voice and interests of the public clean energy funds in the United States. Since its formal inception in 2003, CESA has been successful in working to solve common problems encountered by its member funds through project assistance and information sharing. In addition, collectively, the state clean energy funds – CESA members – have the ability to frame and address key issues of clean energy market development with federal agencies, regulators, industry participants, and in the national media. This is a major strength of CESA and one that it is effectively realizing through such joint projects as the Solar Photovoltaic, Wind Siting and Offshore Wind, and RPS initiatives.

  Expended $80,000

- Various marketing materials to optimize consumer awareness about the benefits of renewable energy technologies have been developed by the Consumer Education Program. Consumer outreach materials, which can be found on the Energy Commission's website or by calling the Energy Commission's Call Center, include fact sheets, NSHP consumer brochures, consumer guides, and marketing materials. This fiscal year, consumer brochures for the NSHP were developed, which are distributed at solar conferences and events.

  Expended $743

- The Solar Power Conference is the premiere solar event (featuring photovoltaics, concentrating photovoltaics, solar thermal electric, and solar hot water) in the United States, growing from 1,100 attendees to over 12,500 in just four years. The attendees come from all segments of the solar industry including manufacturers, integrators and installers, large and small customers, architects and builders, and policy makers. Solar Power Conference sponsorship dues for participation in the September 24-27 national solar event were $4,995. Solar Power 2007 attracted national and international attendees and exhibitors. California has experienced tremendous growth in demand for solar technologies, and policy makers are currently developing plans to boost public support for expanding photovoltaic. This event provided a venue for the Energy Commission to show its involvement with developing new, innovative strategies to meet the demand in California. Supporting this event helps the Energy Commission demonstrate its leadership to major industry and political leaders from the United States and around the

world. This conference is also a critical connection with industry participants in support of NSHP and SB 1 work.

Expended $4,995

- Sustainable Energy Finance Initiative Public Finance Alliance (SEF Alliance) is a $55,000 annual membership agreement to participate in an international platform to support the dissemination and promotion of best practices for current and emerging public finance mechanisms that increase innovation and private investment in the renewable energy and energy efficiency sectors. The scope of the SEF Alliance is global, but membership is limited to publicly backed sustainable energy funding agencies. The Energy Commission is a founding member and a member of the Steering Committee. Membership in the SEF Alliance provides an opportunity for the Energy Commission to achieve the following with other SEF Alliance members:
    - Share information about programs, approaches, strategies, best practices, and operational experiences; develop and undertake joint projects to find solutions to key, cross-cutting problems facing members; and undertake research, policy analysis, and other efforts to promote the use of sustainable energy technologies.
    - Share data, performance, and other expertise on various sustainable energy technologies.
    - Leverage the resources available to the funds (government funds to promote and invest sustainable energy technologies, companies, or market structures) by identifying and exploring opportunities for joint investments in projects that improve the members' collective cost-effectiveness, for obtaining external funding, and for increasing public and private capital investments in this sector.
    - Expand the network of relevant contacts and partners that can improve the effectiveness of the member funds, including other governments, private companies, investors, public officials and others.

  Expended $55,000

- The Rahus Institute's California Solar Center is an annual $2,500 membership agreement. California Solar Center is designed to be a prime source of information on solar energy activity in California. It was created to promote greater use of renewable energy through education, research, and program and policy development. The goal is to provide timely and accurate information to help develop the market for solar energy technology and design practices. The Energy Commission received the benefit of advertising solar energy projects, took advantage of a link-through to the Commission's rebate program, and benefited from the leveraged value of extending its renewable energy consumer education activities. Solar e-Clips, the free on-line service from California Solar Center, provides updates on projects and policy in a rapidly evolving California solar market. California Solar Center's close working relationship with the POUs is also helpful for the Energy Commission's mandates under SB 1.

  Expended $2,500

For further information about consumer education activities conducted from July 2007 through June 2008, please see the *2008 Annual Report Appendix, Appendix F*, located on the Energy Commission's website at www.energy.ca.gov/renewables/quarterly_updates/index.html.

CHAPTER 4:
Progress in Achieving Renewables Portfolio Standard 20 Percent by 2010 Target

Since 2002, the goals of the RPS have informed the policies of the Renewable Energy Program's elements as they have fostered the growth of the renewable energy market in California. The following responds to the *2008 Annual Report's* legislative requirement to address the progress being made toward achieving the RPS goal of 20 percent by 2010 by each element of the Renewable Energy Program.

Emerging Renewables Program

The Emerging Renewables Program and NSHP are designed to encourage the development of renewable generation technologies for self-generation purposes. Self-generation can also be defined as distributed generation to produce energy used on-site.

The Emerging Renewables Program and the NSHP guidelines recognize that the renewable energy market includes two commodities: the energy produced from renewable facilities (the electrons) and the renewable and environmental attributes of the energy, termed "renewable energy credits." Renewable energy credits can be created only if renewable energy is produced. Currently, only energy and renewable energy credits sold together, termed "bundled" energy, are eligible for the RPS. Since the Emerging Renewables Program and the NSHP support facilities for which the energy is used on-site, the associated renewable energy credits typically are not eligible for the RPS. An exception, however, is if the facility produces more energy than it uses on-site. In such cases, the distributed generation owner could enter into a contract to sell the excess energy and renewable energy credits to a retail seller to count toward RPS targets.[44]

However, the RPS statutes conditionally allow the CPUC to establish rules that would allow retail sellers to procure "tradable"renewable energy credits, the term used for renewable energy credits sold separately from the associated electricity. The CPUC is in the process of developing rules for tradable energy credits. If the CPUC authorizes the use of tradable renewable energy credits for the RPS, then the renewable energy credits from distributed generation consumed on-site could become RPS-eligible. Thus, while legislation and regulations currently exclude from RPS-eligibility the energy used on site from facilities supported by the Emerging Renewables Program and NSHP, this may change next fiscal year.

In addition, it should be noted that the Emerging Renewables Program and the NSHP have funded more than 123 MW of new renewable generating capacity, which has generated an

[44] Note that energy from a distributed generation facility may also be eligible for the RPS if the facility operator/owner sells the energy and renewable energy credits to a retail seller through a standard contract/tariff executed pursuant to Public Utilities Code 399.20 as implemented by the CPUC (Decision 07-07-027 in Ratemaking 06-05-027). However, distributed generation facilities that receive funding from the Emerging Renewables Program and NSHP do not qualify for the standard contract/tariff developed to implement Public Utilities Code 399.20.

estimated 161 gigawatt-hours (GWh) of electricity for consumers and offset a corresponding amount of grid-supplied electricity.

Lastly, it is important to recognize the contribution of distributed generation toward greater renewable resource diversity. SB 1's ambitious objective for solar-distributed generation is to achieve 3,000 MW of installed solar by the end of 2016.

Existing Renewable Facilities Program

Production incentives offered by the Existing Renewable Facilities Program assist RPS-eligible biomass and solar thermal facilities, with costs too high to be competitive, to remain on-line and provide a stimulus to restart existing facilities that have shut down. Preserving existing facilities' on-line status contributes to meeting the state's statutory RPS requirement of 20 percent by 2010 by both maintaining existing renewable generation and promoting additional generation.

Toward this end, one of the goals of the Existing Renewable Facilities Program is to help these facilities reach self-sustainability by 2011. The California Biomass Energy Alliance has stated that, with the assistance of Existing Renewable Facilities Program funds, the existing solid-fuel biomass industry will be self-sustaining by 2011. This is further corroborated by three biomass facilities that opted not to apply for Existing Renewable Facilities Program funding in 2007. Sierra Pacific Industries Burney, Lincoln, and Quincy, all of whom previously received funding from the program from 1998 through 2006, decided that Existing funds were not needed to support their operations in 2007. Big Valley Power, a 2005 restart facility, claimed in its 2007 funding award application that it would become self-sustaining after 2007.

During the 2007-2008 fiscal year, the Existing Renewable Facilities Program approved the funding applications for three restarted biomass facilities representing approximately 30 MW of additional capacity. One facility was on-line during this fiscal year, adding more than 37 GWh of RPS-eligible generation to the grid. During the 2007 calendar year, Existing Renewable Facilities Program funding supported over 3,300 GWh of RPS-eligible generation.

Also, initial staff analysis shows that generation from existing biomass and solar thermal electric facilities that received funding in the 2007 calendar year represents a substantial portion of the RPS claims by PG&E, SCE, and SDG&E. Almost 26 percent of RPS procurement claims reported by PG&E in 2007 are from biomass facilities receiving funding from the Existing Renewable Facilities Program. In 2007, SDG&E reported that 25 percent of its RPS-eligible procurement came from the Covanta Delano biomass facility, and in its funding application, Covanta Delano stated that the facility could not operate without Existing Renewable Facilities Program funding. For that same year, SCE reported that 8 percent of its RPS procurement came from generation produced by biomass and solar thermal facilities that received Existing Renewable Facilities Program funding. For the IOUs, the Existing Renewable Facilities Program is essential to the success of the RPS. [45]

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[45] PG&E, SCE, and SDG&E annually file their RPS-procurement claims for the previous calendar year using the CEC-RPS-Track form according to the requirements in the *Renewables Portfolio Standard*

Production incentive payments to existing facilities also assist aging facilities perform major maintenance and improvements that may improve overall plant efficiency and/or reduce the cost of operation, both of which could result in additional generation. Many facilities reported that incentive payments would be used to perform a variety of these improvement projects in 2007-2008. Examples include boiler overhauls (biomass), sawmill construction (biomass), fuel handling improvements (biomass), replacement of broken mirrors (solar thermal), and the replacement of thermal conduction tubes (solar thermal). Other facilities stated that the funds would be used to procure additional fuel to increase generation or to research other eligible biomass fuel sources.

In 2006, the Governor issued an Executive Order (S-06-06) stating that 20 percent of the RPS-eligible generation must come from biomass-derived fuel sources in 2010 and 2020. Based on the Energy Commission's demand forecast for 2010,[46] biomass generators would need to produce nearly 11,000 GWh of electricity to meet this goal. Existing solid fuel biomass facilities participating in the Existing Renewable Facilities Program are expected to produce over 3,000 GWh of RPS-eligible generation, or about 30 percent of the target, providing a firm foundation to meet the Governor's goal.

Consumer Education Program

The Consumer Education Program plays an important role in increasing consumer awareness about renewable energy and emerging renewable systems through education, marketing, and outreach. However, the Consumer Education Program's information, products, and processes are not a direct component of the measured progress in achieving the 20 percent by 2010 RPS goal.

New Renewable Facilities Program

Before the passage of California's RPS in 2002, 31 New Renewable Resources Account auction-winning projects were able to come on-line between 1998 and 2002. This was true despite the beginning of California's energy crisis in 2000 and its effect on new renewable electricity-generating facilities.

Most of the New Renewable Resources Account projects were proceeding on schedule with minimal delays until late 2000, when the IOUs' financial difficulties began to strain California's electricity market. New electricity-generating projects began to encounter problems due to market uncertainties and found it difficult, and in some cases impossible, to secure power purchase agreements. Further, many projects were unable to obtain the financing needed to

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Eligibility Guidebook. These CEC-RPS-Track filings are due to the Energy Commission on May 1 of each year. Energy Commission staff has not verified the procurement claims listed in the 2007 filings, which are self-reported.

[46] California Energy Commission, November 2007, *California Energy Demand 2008 - 2018: Staff Revised Forecast*, FINAL Staff Forecast, 2nd Edition, CEC-200-2007-015-SF2, www.energy.ca.gov/2007publications/CEC-200-2007-015/CEC-200-2007-015-SF2.PDF. Based on this report, the RPS goal of 20 percent of electricity sales by 2010 is equal to 54,577 GWh.

begin constructing facilities, purchasing equipment, or both. Permitting difficulties were a second factor in project delays. Recognizing these difficulties and to ease California's anticipated energy shortage, the New Renewable Resources Account auction process incorporated a system of bonuses and penalties to encourage early on-line dates.

Following the passage of a statewide RPS, 16 projects were able to overcome the challenging market conditions to come on-line. The RPS targets imposed on the IOUs aided many of these projects in getting power purchase agreements, which consequently led to being able to secure the project financing needed for project development.

Of the 47 New Renewable Resources Account completed projects, 36 projects sought and received certification under the RPS, representing more than 217 MW of annual capacity. Many small wind projects were consolidated when certified under the RPS. As a result, these 37 projects constitute 22 generating facilities eligible to support the RPS. Since 1998, these facilities have generated more than 3,600 GWh of renewable generation. During the 2007-2008 fiscal year, 11 projects receiving incentive payments from the New Renewable Resources Account were RPS certified. These facilities produced more than 280 GWh of RPS-eligible generation.

CHAPTER 5:
Additional Renewable Energy Program Activities

Cost Benefit Study of Self-Generation Incentive Program

Summary

Under Assembly Bill 2778 (Lieber, Chapter 617, Statutes of 2006), on or before November 1, 2008, the Energy Commission, in consultation with the CPUC and California Air Resources Board, must evaluate the costs and benefits, including air pollution, efficiency, and transmission and distribution system improvements, of providing ratepayer subsidies for renewable and fossil fuel "ultraclean and low-emission distributed generation" as part of the CPUC's Self-Generation Incentive Program. The Energy Commission's evaluation must be conducted as part of its *Integrated Energy Policy Report*. The Energy Commission must include recommendations for changes in the eligibility of technologies and fuels under the Self-Generation Incentive Program, and whether the level of subsidy should be adjusted after considering its conclusions on costs and benefits.

A contract with TIAX, Inc., was approved at the Energy Commission's business meeting in January 2008 to provide the comprehensive cost-benefit analysis of electric generation technologies related to the CPUC's Self-Generation Incentive Program. An *Integrated Energy Policy Report* Committee Workshop is scheduled for September 2008 to review and discuss the draft analysis report. Input from the workshop will be incorporated into the final report which is scheduled for completion in September 2008 for inclusion in the *2008 Integrated Energy Policy Report Update.*

TIAX, Inc., contract details through June 2008 are referenced in the *2008 Annual Report Appendix, Appendix G*, located on the Energy Commission's website at www.energy.ca.gov/renewables/quarterly_updates/index.html.

In fiscal year 2007/2008:
Encumbered $494,848; Expended $26,719

Senate Bill 1

Background

In August 2006, Governor Arnold Schwarzenegger approved SB 1, comprehensive legislation implementing a statewide solar energy incentive program. SB 1 is the result of the Governor's "Million Solar Roofs Initiative" and is built upon the CPUC's CSI program, the Energy Commission's NSHP, and the POUs' existing solar energy incentive programs. In implementing the statewide solar energy incentive program under SB 1, the goal of the state is to install 3,000 MW of new solar energy systems, establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for both homes and businesses in 10 years, and to place solar energy systems on 50 percent of new homes in 13 years.

Among other directives, SB 1 instructed the Energy Commission, by January 1, 2008, and in consultation with the CPUC, local POUs, and interested members of the public, to establish and subsequently revise eligibility criteria for solar energy systems[47] receiving ratepayer-funded incentives; requirements on ratepayer-funded incentives; and rating standards for equipment, components, and systems to assure reasonable performance.

To design a successful statewide solar energy incentive program that is consistent with the Governor's Million Solar Roofs Initiative, the Energy Commission considered several principles noted in its *2005 Integrated Energy Policy Report.* These principles included the following:

- Leveraging energy efficiency improvements should be a primary consideration in deploying photovoltaic systems.
- Rational targeting of photovoltaic deployment to achieve the greatest cost benefit should be a central feature of a large-scale solar program.
- Transitioning away from capacity-based incentives to performance-based incentives and integrating energy efficiency and time-of-use energy considerations should be a priority.

The *2005 Integrated Energy Policy Report* also recognized the common policy vision of the loading order adopted in the *Energy Action Plan* and the *2003 Integrated Energy Policy Report.* The loading order establishes the following priorities for the development of energy resources: first, energy efficiency and demand response; second, renewable energy resources and distributed generation; and third, clean, fossil fuel, central-station generation. The Governor's energy policy, in response to the *2003 Integrated Energy Policy Report,* highlighted the importance of the Million Solar Roofs Initiative and the aggressive pursuit of all cost-effective energy efficiency, consistent with the loading order.

Additional policy direction provided further guidance as the Energy Commission developed its response to SB 1 mandates. These included:

- AB 32, the Climate Action Initiative[48]
- Energy Efficiency Goals and Resource Procurement[49]
- Green Building Initiative[50]

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[47] "Solar energy systems" means a solar energy device that has the primary purpose of providing for the collection and distribution of solar energy for the generation of electricity, that produces at least 1 kW and not more than 5 MW alternating current-rated peak electricity, and that meets or exceeds the Energy Commission's established eligibility criteria (Public Resources Code Section 25781[e]).

[48] Governor Schwarzenegger's Executive Order S-3-05 placed California in a global leadership position by establishing aggressive greenhouse gas emissions reduction targets. The Climate Action Team's 2006 Report to the Legislature highlighted the need for expansion of energy efficiency, coupled with increased penetration of photovoltaic systems. These policies were reinforced by AB 32.

[49] Senate Bill 1037 (Kehoe, Chapter 366, Statutes of 2005) and AB 2021 (Levine, Chapter 734, Statutes of 2006) directed electrical corporations subject to the CPUC's authority and local POUs, to first meet their unmet resource needs through all available energy efficiency and demand response resources that are cost effective, reliable, and feasible.

- The CPUC's October 18, 2007, Decision 07-10-032.[51] This decision reaffirmed the *Energy Action Plan's* vision of a loading order and states California's highest priority is to increase energy efficiency measures.

By combining high levels of energy efficiency and high-performing solar energy systems, California maximizes the major investment it is making through SB 1.

Energy Commission's Senate Bill 1 Roles

SB 1 required the Energy Commission to adopt eligibility guidelines for solar energy systems receiving ratepayer-funded incentives and identified the following conditions:

- High-quality solar energy systems with maximum system performance to promote the highest energy production per ratepayer dollar.
- Optimal system performance during periods of peak demand.
- Appropriate energy efficiency improvements in the new and existing home or commercial structure where the solar energy system is installed.

In August 2007, the staff report *Eligibility Criteria and Conditions for Incentives for Solar Energy Systems*[52] was released to solicit comments from stakeholders. The report was organized into sections addressing SB 1 mandates for solar energy component standards, solar energy system installation standards, energy efficiency, and other eligibility criteria established in statute. For each of these sections, the report presented the pertinent SB 1 provisions, background, NSHP and CSI provisions, and recommendations for guidelines. The Energy Commission began its proceedings with a Renewables Committee workshop on August 22, 2007. Staff received comments at the workshop in addition to written comments from other parties.

In September 2007, after careful consideration of comments on the staff report, staff released *California's Solar Electric Incentive Program Pursuant to Senate Bill 1 - Draft Guidelines*.[53] Staff

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[50] Governor Schwarzenegger's Executive Order S-20-04 was his first concrete step to pursue the loading order. The Green Building Initiative is committed to aggressive action in reducing state building electricity use. The reduction, 20 percent by 2015, will be effected by implementing all the cost-effective measures described in the Green Building Action Plan. The Green Building Initiative also strongly encouraged commercial building owners to take similar actions in reducing electricity usage. The Green Building Initiative urged the CPUC to apply its energy efficiency authority to improve commercial building energy efficiency by the 20 percent goal.

[51] Through this decision, the CPUC adopted goals for new residential construction to be net-zero energy by 2020 and new commercial construction to be net-zero energy by 2030.

[52] California Energy Commission, August 2007, *Eligibility Criteria and Conditions for Incentives for Solar Energy Systems*, *Senate Bill 1*, CEC-400-2007-014, www.energy.ca.gov/2007publications/CEC-400-2007-014/CEC-400-2007-014.PDF.

[53] California Energy Commission, October 2007, *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1 – Draft Guidelines*, CEC-300-2007-012-D, www.energy.ca.gov/2007publications/CEC-300-2007-012/CEC-300-2007-012-D.PDF.

conducted another Renewables Committee workshop in early October to present a summary of the proposed guidelines and to solicit public comments on the proposed guidelines.

After the second workshop and subsequent written comments from stakeholders, the Renewables Committee issued the Committee Final version of the *Guidelines*. In November 2007, a notice went out to consider adoption of the *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1 – Committee Final*, at a scheduled business meeting on December 19, 2007. In January 2008, these adopted SB 1 *Guidelines*[54] were made available to the public. The Guideline requirements include the following:

- The solar energy system must be intended primarily to offset part or all of the consumer's own electricity demand. The system must be located on the same premises where the consumer's own electricity demand is located. The system must be connected to the electrical distribution grid of the utility serving the customer's electrical load.
- Incentives must decline at a rate of no less than an average of 7 percent per year and must be reduced to zero by the end of 2016.
- All components of the solar energy system must be new and unused and should not have previously been placed in service in any other location or for any other application. All system components must be included on the Energy Commission's eligible equipment list. All solar energy systems must have a minimum 10-year warranty to protect against defects and undue degradation of electrical generation output.
- All solar energy systems must be installed with a performance meter or an inverter with a built-in performance meter to monitor and measure the system's performance and quantity of electricity generated by the system.
- The solar energy system must be installed with the manufacturer's specifications and in compliance with all applicable electrical and building code standards. Rating standards for equipment have been set to ensure high performing systems are incentivized.
- Calculation of incentive is based on solar energy system design and installation characteristics. Incentive design is available in two types: performance-based or expected performance-based.
- Energy efficiency requirements for newly constructed and existing residential and commercial buildings must be met.
- On an annual basis beginning June 1, 2008, local POUs must submit information relating to the utility's solar initiative program. The Energy Commission has received a total of 29 reports from local POUs.

Other SB 1 requirements to be completed by the Energy Commission include:

- Initiate a public proceeding, no later than July 1, 2007, to study and make findings on whether, and under what conditions, solar energy systems should be required on new

[54] California Energy Commission, November 2007, *Guidelines for California's Solar Electric Incentive Programs Pursuant to Senate Bill 1*, CEC-300-2007-012-CMF, www.energy.ca.gov/2007publications/CEC-300-2007-012/CEC-300-2007-012-CMF.PDF.

residential and new nonresidential buildings, including the establishment of numerical targets. The study is to be updated periodically.

At the June 20, 2007, business meeting, the Energy Commission approved an order to initiate a public proceeding and delegate the oversight of the proceeding to both the Efficiency Committee and the Renewables Committee.

- Develop an offset program that allows a developer or seller of production homes[55] to forego the offer requirement[56] on a project by installing solar energy systems generating specified amounts of electricity on other projects, including, but not limited to, low-income housing, multifamily, commercial, industrial, and institutional developments. The amount of electricity required to be generated from solar energy systems used as an offset must be equal to the amount of electricity generated by solar energy systems installed on a similarly sized project within that climate zone, assuming 20 percent of the prospective buyers would have installed solar energy systems.
- Publish educational materials designed to demonstrate how builders may incorporate solar energy systems during construction as well as energy-efficiency measures that best complement solar energy systems.
- Develop and publish the estimated annual electrical generation and savings for solar energy systems. The estimates must vary by climate zone, type of system, size, lifecycle costs, electricity prices, and other factors the Energy Commission determines to be relevant to a consumer when making a purchasing decision.
- Provide assistance to builders and contractors, which could include technical workshops, training, educational materials, and related research.
- Conduct annual random audits of solar energy systems to evaluate their operational performance.
- In consultation with the CPUC, evaluate the costs and benefits of having an increased number of operational solar energy systems as part of the electrical system with respect to their impact upon the distribution, transmission, and supply of electricity, using the best available load profiling and distribution operations data from the CPUC, local POUs, and electrical corporations, and performance audits of installed solar energy systems.

Additionally, SB 1 directed the CPUC to require efficiency improvements in existing buildings as a condition of providing incentives for eligible solar energy systems; submit a report to the Governor and the Legislature on the costs and benefits of net energy metering, wind energy co-metering, and co-energy metering to participating customers and nonparticipating customers;

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[55] "Production home" means a single-family residence constructed as part of a development of at least 50 homes per project that is intended or offered for sale (Public Resources Code Section 25405.5[a][2]).

[56] SB 1 requires a seller of production homes to offer a solar energy system option to all customers that enter into negotiations to purchase a new production home constructed on land for which an application for a tentative subdivision map has been deemed complete on or after January 1, 2011, and disclose (1) the total installed cost of the solar energy system option and (2) the estimated cost savings associated with the solar energy system option (Public Resources Code Section 25405.5[b]).

and allocate not more than $50 million to research, development, and demonstration that explores solar technologies and other distributed generation technologies that employ or could employ solar energy for generation or storage of electricity or to offset natural gas usage.

In fiscal year 2007/2008, there were no RRTF contract expenditures for SB 1 activities.

CHAPTER 6:
Historical Renewable Energy Program Activities

Existing Renewable Facilities Program

Agriculture-to-Biomass Program

In September 2003, the Governor signed SB 704, which was intended to improve the air quality in California's agricultural areas by reducing the open-field burning of agricultural fuels. SB 704 required the Energy Commission to allocate $6 million from the RRTF for incentives to electricity-generating facilities that increased their use of qualified agricultural biomass for the 2003-2004 fiscal year. The Agriculture-to-Biomass Program, although not technically a part of the Renewable Energy Program, is discussed in this section because the funding for this program was reallocated from the Existing Renewable Facilities Program.

Funded for one year, the Agriculture-to-Biomass Program provided financial incentives to biomass facilities that purchased and converted these fuels for electricity generation from July 1, 2003, through June 30, 2004. Incentives were paid at a rate of $10 per green ton of eligible biomass fuel. Nine participants registered their facilities with the Energy Commission for funding. With final payments made in August 2004, total payments from the Agriculture-to-Biomass Program exhausted the $6.0 million allocation, and the program is now concluded.

Customer Credit Program

Summary

From 1998 through 2003, the Energy Commission used the $75.6 million initially allocated to the Customer Credit Program to foster market demand for renewable electricity. The funds were distributed via a "credit" to registered renewable providers who delivered eligible renewable energy to qualifying customers. The customer credit, a cents/kWh discount for eligible renewable electricity purchases, allowed providers to offer their products to customers at prices that were competitive with conventional electricity. Providers passed the credit along to their customers.

Since the electricity crisis in 2000 and 2001, changes in California's electricity market structure affected the Customer Credit Program. In 2001, the CPUC suspended customers' option for direct access contracting. Furthermore, the advent of the RPS in California suggested that a very different market would soon be in place for electricity consumers and providers. Although customers may no longer choose to switch from their IOUs to an electric service provider serving renewable energy, the RPS provides an alternative for supporting renewable energy generation that does not require customers to enter into direct access contracts.

As directed by SB 1038, on April 2, 2003, the Energy Commission produced the *Customer Credit Report* for the Governor and the Legislature on how to use the customer credit funds most effectively. In the report, the Energy Commission recommended that the Customer Credit

Program be discontinued. The report also included recommendations for reallocation of Customer Credit funds, as well as retroactive payments to eligible customers for the period January 1, 2002, through April 2, 2003.

In May 2004, consistent with the *Customer Credit Report* and under Public Resources Code Section 25748(b), the Energy Commission reallocated 90 percent of available Customer Credit funds to the Emerging Renewables Program and 10 percent to the Consumer Education Program. A final payment in December 2004 concluded Customer Credit Program activities, and the Energy Commission discontinued the program.

The balance of $315,829 (consisting of $276,909 in SB 90 money and $38,920 from Bear Valley Electric Service contributions) remaining in the Customer Credit Program account as a result of discontinuing the program was reallocated to the Emerging Renewables Program in August 2006. This reallocation effectively zeroed out the account. Cumulative payments made under the Customer Credit Program totaled about $65 million.

CHAPTER 7: Reallocation of Funds

The Energy Commission is authorized to reallocate RRTF funds among programs in a manner consistent with Public Resources Code Section 25748(b), which states that,

> (b) Money may be reallocated without further legislative action among existing, new, and emerging technologies and consumer-side programs in a manner consistent with the report [*Investing in Renewable Electricity Generation in California*][57] and with the latest report provided to the Legislature pursuant to this section, except that reallocations shall not increase the allocation established in Section 25742 [to the Existing Renewable Facilities Program].

The next section summarizes the reallocations made during the first four years of the Renewable Energy Program's operation.

1998 through 2001

From the beginning of the program in 1998 through 2000, there was no need for the Renewable Energy Program to reallocate SB 90 RRTF funds.[58] However, high electricity prices in 2000 and 2001 sharply limited payments from the Existing Renewable Facilities Program and prompted several reallocations among programs, as noted in the *2002 Biennial Report* [59] and discussed below.

As intended by the Legislature, the Energy Commission responded to the energy crisis and its effects on the renewable energy industry by reallocating program funds from undersubscribed programs to those needing increased funding. In an effort to bring new electrical capacity on-line in 2001, the Energy Commission shifted funds from the Existing Renewable Facilities Program to the New Renewable Facilities Program. In October 2000, the Energy Commission reallocated up to $40 million to the New Renewable Facilities Program for a second auction and additionally authorized up to $40 million in the second quarter of 2001 for a third auction. The reallocation of the latter $40 million did not occur because the additional funding proved unnecessary due to project cancellations, the forfeit of potential bonuses for early on-line dates, and penalties incurred for later on-line dates.

Of the $40 million reallocation to the New Renewable Facilities Program to fund the second auction, $6.2 million was not needed for that purpose and, in September 2001, was subsequently

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[57] California Energy Commission, June 2001, *Investing in Renewable Electricity Generation in California*, P500-00-022 (Public Resources Code Section 25741[e]).
[58] California Energy Commission, May 2000, *2000 Renewable Energy Program Biennial Report*, P500-00-015.
[59] California Energy Commission, May 2002, *2002 Biennial Report*, P500-02-010, www.energy.ca.gov/reports/2002-06-04_500-02-010.PDF.

redirected to the Emerging Renewables Program, which was experiencing a rise in demand for rebate funds as a result of high electricity prices and consumer interest in energy independence.

During the First Extraordinary Session in April 2001, Assembly Bill 29X (Kehoe, Chapter 8, Statutes of 2001, 1st Extraordinary Session), ordered that $30 million be reallocated to the Emerging Renewables Program – $15 million to come from the RRTF (the Energy Commission reallocated these monies from the Existing Renewable Facilities Program) and $15 million from the state's General Fund. The $30 million was reallocated to the Emerging Renewables Program for additional rebate funds, with a portion set aside for customers of POUs. Senate Bill 19X (Chesbro, Chapter 3, Statutes of 2003, 1st Extraordinary Session), subsequently directed that the unused monies (about $6.3 million) designated for rebates to POUs' customers be transferred back to the General Fund to help reduce the state's budget deficit.

In September 2001, the Energy Commission also reallocated $10 million of unused Customer Credit Program funds to the Emerging Renewables Program to further supplement the availability of rebate dollars.

The next section discusses fund reallocations from January 2002 through June 30, 2007.

2002 through 2006

The Budget Act of 2002 (Items 3360-011-0382 and 3360-012-0382) directed the Energy Commission to loan RRTF dollars of $150 million to the General Fund and $8.9 million to the California Consumer Power and Conservation Financing Authority. In fiscal year 2004-2005, repayment of the $8.9 million loan was completed. The General Fund, having remitted $131.8 million in June 2007, has an outstanding principal balance of $18.2 million.

In September 2002, the Energy Commission reallocated $13 million from the Existing Renewable Facilities Program to the Emerging Renewables Program to respond to the continuing growth in demand for system rebates.

The Budget Act of 2003, Chapter 157, Section 2.0, Statutes of 2003, directed the Energy Commission to reallocate $6.0 million from the RRTF for the Agricultural Biomass-to-Energy Program, to be administered under the provisions of SB 704. To accomplish this objective, the Energy Commission reallocated $6.0 million from the Existing Renewable Facilities Program to the Agriculture-to-Biomass Program to be paid on a $10-per-green-ton basis. Nine participants registered their facilities with the Energy Commission for funding, and final payments exhausting the $6.0 million were made in August 2004.

In April 2003, the Energy Commission recommended in its *Customer Credit Report* to the Governor and the Legislature that the Customer Credit Program be discontinued and the funds available for that program under SB 1038 be reallocated as follows:

- Ten percent to the Consumer Education Program (specifically for the RPS tracking and verification program).

- Forty-five percent to New Renewable Facilities Program.
- Forty-five percent to Emerging Renewables Program.

However, in May 2004, the Energy Commission approved reallocating 10 percent of available Customer Credit Program funds to the Consumer Education Program and 90 percent to the Emerging Renewables Program. The continuing high demand in the Emerging Renewables Program dictated that the Energy Commission reallocate an increased percentage of Customer Credit funds to the Emerging Renewables Program.

In April 2004, the Energy Commission approved the reallocation of $10 million from accrued interest on the RRTF to the Emerging Renewables Program, and in May 2004, $15 million was reallocated from the Existing Renewable Facilities Program to the Emerging Renewables Program. During fiscal years 2004-2005 and 2005-2006, the Energy Commission did not reallocate any RRTF dollars.

In mid-2006, the need to reallocate additional funds to the Emerging Renewables Program became apparent. The program experienced a dramatic increase in the volume of rebate applications in anticipation of a July 1, 2006, drop in the rebate level and more than 3,300 reservations were received in June. Based on an estimate of the funds necessary to approve these applications and the anticipated volume for the remainder of 2006, the Emerging Renewables Program determined that it would deplete all of its available rebate funds. A reallocation was necessary to prevent a major market disruption harmful to the industry. Consequently, in August 2006, the Energy Commission approved reallocating $45 million to the Emerging Renewables Program from several Renewable Energy Program funding sources as shown in Table 15.

Table 15: Renewable Resource Trust Fund Reallocations to Emerging Renewables Program, August 2006

Funding Source	Reallocation Amount
SB 90 Funds These were SB 90 funds that were conditionally reallocated from the Existing Renewable Resources Account to the New Renewable Resources Account to fund the second and third New Account auctions. However, due to penalties and cancellations associated with New Account awards, these funds were not needed to cover New Account auction winners.	**$15,123,000**
Existing Renewable Facilities Program (Tier 2) These were funds allocated to Tier 2 technologies (wind) that were not expended and would not be necessary to fund Tier 2 technologies through the end of 2006.	**$23,600,000**
Interest Earnings The RRTF collects interest on the money in the fund and the Energy Commission has the authority to reallocate these funds.	**$6,000,000**
Customer Credit Account The Customer Credit Account is no longer operational, and this transfer zeroed out the account.	**$315,829**
Voluntary Contributions Customers of the state's three main IOUs can contribute to the RRTF. These are funds that were contributed from 1998 through December 2005.	**$19,417**
TOTAL REALLOCATION	**$45,058,246**

Source: California Energy Commission August 2, 2006, business meeting and Renewable Resource Trust Fund database.

2007 through June 30, 2008

An additional spike in rebate applications occurred in December 2006, as customers anticipated the replacement of the Emerging Renewables Program's solar component with the CSI (administered by the CPUC) and submitted more than 2,700 rebate applications. A reallocation was deemed necessary due to the increased volume in applications submitted in December and in consideration of the Emerging Renewables Program's funding status as of December 31, 2006:

- In recognition of the ongoing customer demand for Emerging Renewables Program funds, additional financial support was legislated in 2004 by AB 135, an urgency statute. The Emerging Renewables Program was authorized to use $60 million of future program funds to be collected from 2007-2011.
- Emerging Renewables Program funding under SB 1038, authorizing the expenditure of IOU ratepayer funds collected from 2002 through 2006, was exhausted.
- Funding for the Emerging Renewables Program would continue under SB 1250, which authorizes the use of funds collected from 2007 through 2011. However, this legislation's

Emerging Renewables Program dollars are targeted for use by the Energy Commission's NSHP, an element of the CSI.

Based on staff's estimate of funds necessary to approve all rebate applications submitted through December 31, 2006, staff recommended and the Energy Commission approved reallocating $31.5 million to the Emerging Renewables Program. Table 16 provides a detailed accounting of the source of those funds.

Table 16: Renewable Resource Trust Fund Reallocations to Emerging Renewables Program, May 2007

Funding Source	Reallocation Amount
SB 90 Funds	
New Renewable Resources Account funds remaining from projects whose five-year collection period had ended.	**$1,500,000**
New Renewable Resources Account funds from projects that never came on-line and whose Funding Award Agreements subsequently expired as of 1/1/07.	**$27,000,000**
Interest Earnings The RRTF collects interest on the money in the fund, and the Energy Commission has the authority to reallocate these dollars.	**$3,000,000**
TOTAL REALLOCATION	**$31,500,000**

Source: California Energy Commission May 23, 2007, business meeting and Renewable Resource Trust Fund database.

A subsequent reallocation of $22,720,992 of New Renewable Resources Account funds to the Emerging Renewables Program was approved at the Energy Commission's December 19, 2007, business meeting.[60] These funds consisted of unused SB 90 funds that were previously committed under the first, second, and third New Renewable Resources Account competitive auctions held between 1998 and 2001. The funds are being used for two purposes:

- To partially offset the $60 million loan authorized under AB 135. This legislation authorized the Energy Commission to use up to $60 million of RRTF dollars to support the Emerging Renewables Program and may be expended only until December 31, 2008. The funds are subject to the repayment requirements of Public Resources Code Section 25751(f).
- To provide additional support for meeting the aggressive goals of the NSHP, a component of the CSI, by continuing to pay rebates for the installation of high performing solar systems.

[60]Under the authority of Public Resources Code Section 25748 (b), the Energy Commission is authorized to reallocate RRTF dollars among the Renewable Energy Program elements.

The Energy Commission has valued the ability to reallocate funds in response to varying market demands. Judicious management of ratepayer dollars is well-served as underused program dollars are moved to meet the needs of higher demand program areas. As exemplified in several of the above reallocations, the Energy Commission was able to respond to skyrocketing consumer demand for solar and wind energy system rebates by reallocating funds to the Emerging Renewables Program.

If necessary, the Energy Commission will continue exercising its authority to reallocate funds. This flexibility is particularly important to the Renewable Energy Program's efforts to meet California's renewable resource goals associated with the continued implementation of the NSHP as part of the CSI.

If the Energy Commission decides to further reallocate RRTF monies, it will continue to do so with public input and to report on the reallocations to the Legislature.

CHAPTER 8:
Account Transfers and Repayments

The Energy Commission prepared this chapter in accordance with Public Resources Code Section 25751(f), which provides authorization to the Energy Commission to transfer funds between program accounts within the RRTF (that is, the New Renewable Resources Account, Emerging Renewable Resources Account, Existing Renewable Resources Account, and Renewable Resources Consumer Education Account[61]) for cash flow purposes, provided that the balance due each program account is restored and that the transfers do not adversely affect any of the programs.

The Account Transfers and Repayments chapter covers fiscal year 2007-2008 and responds to Public Resources Code Section 25748(a), which states that the Energy Commission shall report to the Legislature on "…The status of account transfers and repayments."

Beginning in January 2005, AB 135 authorized the Emerging Renewable Resources Account's use of an additional $60 million of RRTF funds to be collected from 2007 through 2011 and subject to the repayment requirements of Public Resources Code Section 25751(f). During fiscal year 2007-2008, these dollars were temporarily transferred from the New Renewable Resources Account to the Emerging Renewables Resources Account from July 1, 2007 through December 31, 2007. The New Renewable Resources Account was the source of the fund transfer because SEPs disbursements had not yet occurred. SB 1036, however, repealed the provisions for awarding SEPs and required the Energy Commission to refund the remaining unencumbered SEP funds to the electrical corporations whose ratepayers contributed funds to support the RRTF, which occurred in March 2008. Subsequent fiscal year 2007-2008 transfers did not occur.

Transfers and repayments of funds between programs could occur in the upcoming fiscal year and the Energy Commission will discuss any such transfers in its *2009 Annual Report*.

[61] These accounts correspond to the New Renewable Facilities Program, Emerging Renewables Program, Existing Renewable Facilities Program, and Consumer Education Program, respectively.

CHAPTER 9:
Interest Expenditures

Public Resources Code Section 25748 requires the Energy Commission to address the allocation of funds from interest on the RRTF. As noted in the *Overall Program Guidebook* for the Renewable Energy Program, interest earned on the funds deposited in the RRTF may be used to augment funds for a particular program element at the Energy Commission's discretion. Additionally, such interest may be used to administer the Renewable Energy Program to the extent appropriated by the Legislature in the annual Budget Act.

In fiscal year 2007-2008, interest earned on the RRTF was $21 million for a cumulative total of $96.3 million. As of June 30, 2008, cumulative expenditures and encumbrances totaled $37.5 million; reallocations totaled $19 million; and in fiscal year 2002-2003, interest totaling $5,300,135 was transferred to the General Fund.[62]

In past years, interest funds, like voluntary contributions, were not allocated among the various program elements under the Renewable Energy Program. However, in April 2004, due to escalating requests for rebate funds, the Energy Commission approved the reallocation of $10 million in RRTF interest to the Emerging Renewables Program. Subsequent demands on rebate dollars prompted additional RRTF interest reallocations in August 2006 and May 2007 ($6 million and $3 million, respectively). Information on these reallocations is detailed in Chapter 5.

RRTF interest also funds the three specific areas described below. Dollars include both expenditures and encumbrances for fiscal year 2007-2008:

- **Support Services ($3,208,030) –** Refers to wages and benefits paid to Energy Commission staff working in the Renewable Energy Program; operating expenses in the form of general office supplies, printing, communications, postage, travel, training, facilities operations, data processing, equipment, and indirect charges.
- **Contractual ($2,063,259) –** Represents contracts that were expended or encumbered from RRTF interest. This includes contracts for technical support services and student assistance, a contract with the Department of Finance for auditing services, and a contract for a cost benefit study of the CPUC's Self-Generation Incentive Program.
- **Pro Rata ($2,355,307) –** A direct assessment against the RRTF is applied by the Department of Finance. This assessment is for the cost recovery of expenses incurred by control agencies in the administration of the RRTF. For example, Pro Rata includes the cost of processing claim schedules, journal entries, reports, and payroll for the State Controller, and the work of the Department of Finance budget analyst.

It should be noted that Renewable Energy Program administrative costs have been funded through interest earnings on the RRTF and have averaged 4.1 percent of total program expenditures since 1998.

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[62] Budget Act of 2002, Chapter 379, Statutes of 2002.

CHAPTER 10:
Contributions to the Renewable Resource Trust Fund

SB 1250 directs electrical corporations to allow their customers to make voluntary contributions in support of renewable resource technologies. These contributions are subsequently deposited into the RRTF. In the past, voluntary contributions had never been allocated to specific elements of the program. However, in mid-2006, a need for additional Emerging Renewables Program rebate funds was identified, prompting a reallocation of $19,417 in voluntary contributions (see Chapter 5 for details). As of June 30, 2008, the balance of voluntary contributions is $1,822.

Golden State Water Company (doing business as Bear Valley Electric Service), an IOU, has also made contributions to the RRTF totaling $568,000 at the end of June 2008. These funds have been allocated to the program elements according to the percentage allocations specified in SB 90 and SB 1038; the reallocations consistent with the Energy Commission's recommendations in its Customer Credit Report under Public Resources Code Section 25748(b); SB 1250; SB 107; and SB 1036.

Table 17 provides a financial summary of the RRTF through June 30, 2008, reflecting cumulative funds collected, disbursed, reallocated, and encumbered since the beginning of the Renewable Energy Program in 1998, and funds loaned and transferred.

Table 17: Renewable Energy Program
Cumulative Funding and Expenditures as of June 30, 2008
($ Millions)[63]

	New Renewable Facilities Program[1,2,3]	Emerging Renewables Program[4,5,6]	Existing Renewable Facilities Program[7,8]	Consumer Education Program[9]	Customer Credit Program	PROGRAM TOTAL
Collected Funds[10]	$592.894	$320.040	$402.996	$21.032	$75.639	$1,412.601
Intrafund Reallocations[11]	-32.544	177.171	-106.600		-10.316	27.711
Disbursements	-74.262	-402.984	-273.143	-10.294	-65.323	-826.007
New Renewable Facilities Disbursement to Utilities	-461.682					-461.682
Year-End Accruals	-1.450	-1.178	-8.241			-10.869
Encumbrances	-4.717	-26.179		-6.448		-37.345
Loan Balance[12]	-18.200					-18.200
REP BALANCE	**$0.039**	**$66.870**	**$15.012**	**$4.290**	**$0.000**	**$86.210**

[1]New Renewable Facilities disbursement to utilities includes $412,650,348 of unused SEPs dollars refunded to utilities pursuant to SB 1036, Statutes of 2007; and $49,031,436 in funds collected from the utilities prior to 2002 that became available due to the Energy Commission's cancellation of two project awards, REN-98-017 and REN-98-018.

[2]New Renewable Facilities accruals are staff's estimate of payments to new facilities that have not yet invoiced as of June 30, 2008.

[3]New Renewable Facilities balance consists of collected funds under SB 90 (1998-2001). This collection period preceded fund collections for SEPs under SB 1038 and SB 1250. Pursuant to SB 1036, effective July 1, 2008, the New Renewable Resources Account is eliminated; the remaining unencumbered New Account funds will be returned to the electrical corporations serving customers subject to the renewable energy public goods charge.

[4]Emerging Renewables disbursements include ERP $402,316,579 and NSHP $667,778.

[5]Emerging Renewables Program accruals are FY 06-07 rebate claims that were received prior to June 30, 2008 but not yet paid

[6]Emerging Renewables encumbrances include ERP $9,434,044 and NSHP $16,745,285.

[7]Existing Renewable Facilities disbursements include $6 million for the Agriculture Biomass-to-Energy Program.

[8]As of June 30, 2008, no Existing Renewable Facilities Program payments for January through June 30, 2008, generation had been made. Consequently, Existing accruals are staff's estimated payments for January through June generation.

[9]Consumer Education encumbrances only include first and second year encumbrances ($2,799,268) of three-year contract (for $4,298,879) with Edelman, the NSHP public awareness campaign contractor.

[10]Collected funds include $568,000 from Bear Valley Electric Service.

[11]Intrafund reallocations include $27.711 million from sources outside IOU collected funds.

[12]$150 million was loaned to the state's General Fund pursuant to the 2002 Budget Act. The General Fund, having remitted $131.8 million in June 2007, has an outstanding principal balance of $18.2 million.

Source: California Energy Commission Renewable Resource Trust Fund database.

Note: Account balances are committed to meeting legislative mandates as follows: rebates for emerging renewable energy system installations, generation from existing renewable facilities, and consumer education activities.

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[63] This table contains data from the Energy Commission's Accounting Office. Accounting data may differ from Renewable Energy Program staff data reported in the table because funds may be returned, credited, or repaid that are not tracked in real time by Renewable Energy Program staff.

ACRONYMS

AB	Assembly Bill
AGAERA	Attorney General's Alternative Energy Retrofit Account
CSI	California Solar Initiative
CESA	Clean Energy States Alliance
CPUC	California Public Utilities Commission
GWh	Gigawatt hours
IOU	Investor-owned utility
kW	Kilowatt
kWh	Kilowatt hours
MW	Megawatts
NSHP	New Solar Homes Partnership
PG&E	Pacific Gas and Electric Company
POU	Publicly owned electric utility
RPS	Renewables Portfolio Standard
RRTF	Renewable Resource Trust Fund
SB	Senate Bill
SCE	Southern California Edison Company
SDG&E	San Diego Gas & Electric Company
SEF Alliance	Sustainable Energy Finance Initiative Public Finance Alliance
SEPs	Supplemental energy payments
WECC	Western Electricity Coordinating Council
WREGIS	Western Renewable Energy Generation Information System